



ChangeIP.com v4 Module Application Guide

Description






This module allows an Ethernet-equipped Crestron 2-series processor to determine its public IP address and then associate that address with a domain name. This module will function behind a router, DSL or Cable Modem. Any time a new address is dynamically assigned, a record is updated in your account at ChangeIP.com, mapping the new IP address of the Crestron processor's site to the static hostname provided by ChangeIP.com. This allows:

- Programmers to keep track of systems installed on circuits with dynamic IP addresses.
- "English" names (e.g. www.yourclient.com) to be given to clients and other technicians for ease of access to eControl web pages or other resources.
- Routing to be setup to access other applications, such as security DVR's.
- Toolbox, Viewport, RoomView, & eControl2 access to dynamic clients using a hostname.

Internet Disclaimer

This module requires Internet access and depends on the output of one or more 3rd-party Internet websites. As such, ControlWorks Consulting is unable to guarantee the formatting, content, availability, or reliability thereof. In the event of a permanent outage or change in formatting, ControlWorks may or may not elect to issue an update to purchasers of the module.

ControlWorks Consulting accepts no responsibility for the accuracy or your usage of data returned by the module.

Compatibility			Processor Requirements	
 2-Series Compatible	 NOT CNMSX Compatible	 NOT System Builder Compatible	 Ethernet REQUIRED	 Compact Flash NOT NEEDED

Support Requirements

In order to use this module you must first setup an account at www.changeip.com. No special routing or port forwarding is needed.

About ChangeIP.com

ControlWorks has partnered with ChangeIP.com to provide this fully-featured dynamic DNS solution for the Crestron platform. To use this module, you will need an account with ChangeIP.com.

ChangeIP.com allows you to completely control the DNS records for your dynamic domains. You can use one of their free domains, or set up your own custom domain such as www.yourclient.com to provide the easiest possible host names.

For more information, please visit www.changeip.com, email them at support@changeip.com or call them at 866-474-4246.

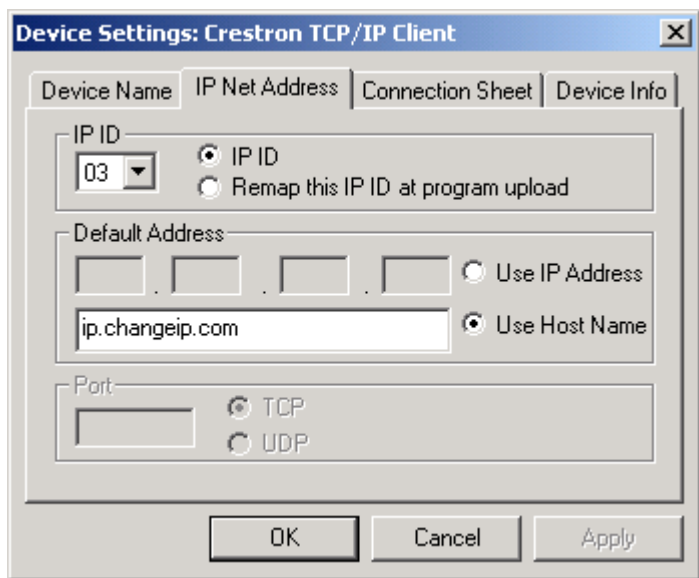
This module has been certified as a Dynamic DNS Client by ChangeIP.com.



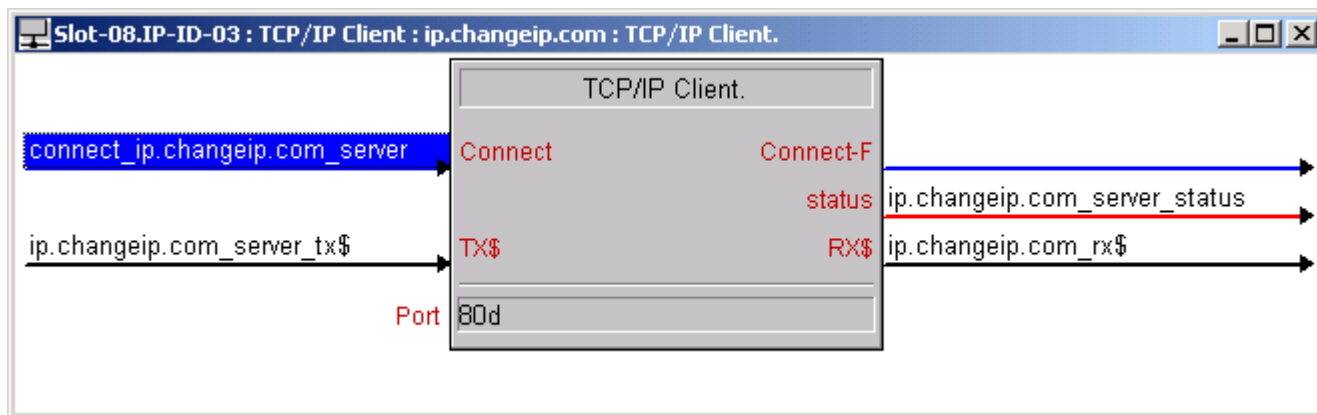
Module Application

It is strongly suggested that you load the supplied demonstration program and touchpanel to gain an understanding of the application of the module before you attempt to implement the module in your own program.

You will have to enter information in three different places in your program in order for the module to function. Under **System Views** drop a **TCP/IP Client** onto your Ethernet Slot. Now double click on the Client and select the **IP Net Address** tab. Enter the **Host Name** `ip.changeip.com` so your Client is setup like this:

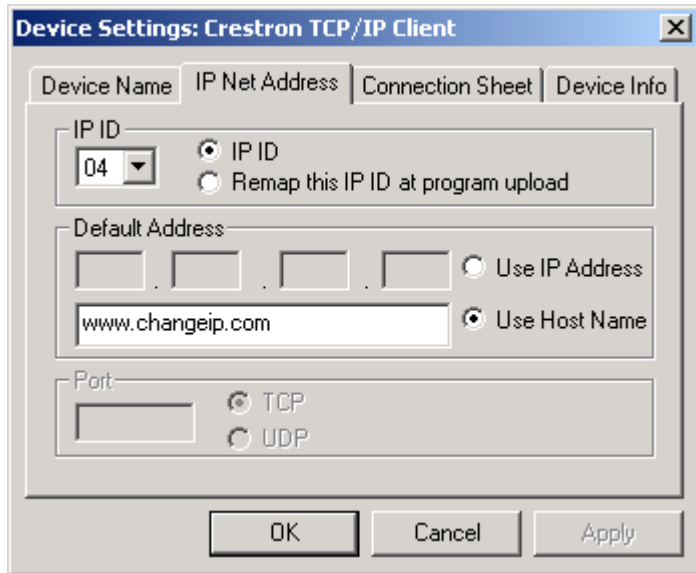


Return to the **Program View** and open the **Client** you just inserted. To keep implementation simple, please use the same signal names used in our demonstration program. Your Client with signal names should look like this:

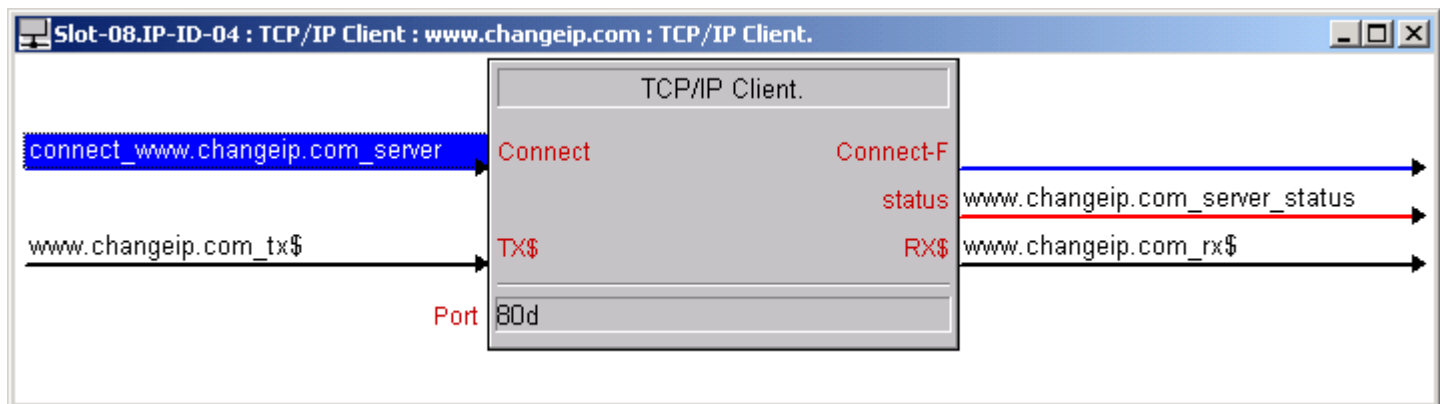


If you are behind a proxy server, and you are getting the proxy's IP address instead of your own, replace Port 80 with Port 8245 on the `ip.changeip.com` TCP/IP client **only**.

Return to **System Views** and drop a second **TCP/IP Client** onto your Ethernet Slot. Repeat the selection of the **IP Net Address** tab. Enter the **Host Name** `www.changeip.com` so your Client is setup like this:

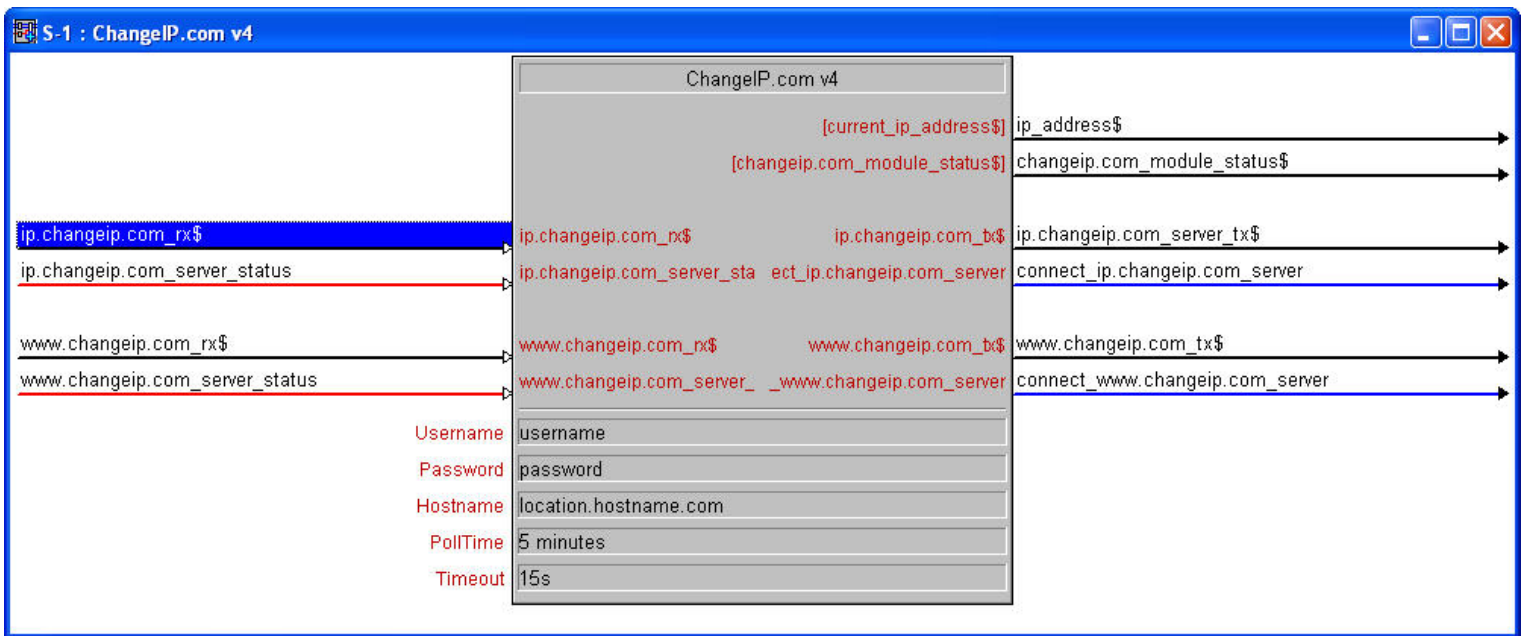


Back to **Program View**. Again, copy the signal names used in the demonstration program onto the second **Client** as follows:



Now launch a second instance of SIMPL Windows and open the program `ChangeIP.com Test Program v4.smw`. If the program you are writing is in the same directory as the demo program, you can simply copy and paste the module with all of its signal names from the demo program into your program. Otherwise, you will need to copy the module and all of its SIMPL+ modules into your project directory first. Do not use a "1" on the connect line of either of the TCP-IP clients. You must use the connection logic from the module.

You will now need to set up your ChangeIP.com account details. Enter your username and password into the parameter fields. You can also adjust the poll time (how often the processor checks for a new IP address) or modify the hostnames that will be updated by the client. The default hostname is `*1`, which will update all of your hostnames in zone 1 of your account. To update only one hostname, enter the hostname directly (e.g. `yourclient.changeip.com`). For more details, visit www.changeip.com.



In order for the module to function, your Control System IP info must have the DNS servers declared. To set up the DNS servers:

1. Use the console command **ADDNns**.
- OR -
2. In Viewport, choose Functions -> Set Up Control System IP Information -> Advanced
- OR -
3. In Toolbox, choose Functions -> DNS Management

For best results, use the DNS servers provided by the ISP of the connection you are trying to monitor. (Type IPCONFIG /ALL at the command prompt of a computer which is connected to the Internet using the same connection) If these are unavailable, you can use 216.175.203.18 and 216.175.203.27, which were used in the test and debug process of this module.

Signal and Parameter Descriptions

Bracketed signals such as "[signal_name]" are optional signals

ANALOG INPUTS

ip.changeip.com_server_status..... tie to status output of TCP/IP client for "ip"
www.changeip.com_server_status tie to status output of TCP/IP client for "www"

SERIAL INPUTS

ip.changeip.com_rx\$..... tie to rx\$ of TCP/IP client for "ip"
www.changeip.com_rx\$..... tie to rx\$ of TCP/IP client for "www"

DIGITAL OUTPUTS

connect_ip.changeip.com_server tie to connect of TCP/IP client for "ip"
connect_www.changeip.com_server tie to connect of TCP/IP client for "www"

SERIAL OUTPUTS

ip.changeip.com_tx\$..... tie to tx\$ of TCP/IP client for "ip"
www.changeip.com_tx\$..... tie to tx\$ of TCP/IP client for "www"
[changeip.com_module_status\$] status messages from attempts to retrieve the IP
address, for debugging use only
[current_ip_address\$] contains your current IP address for local display or
other uses within the Crestron program

PARAMETERS

Username..... your ChangeIP.com username
Password..... your ChangeIP.com password
Hostname..... desired hostname to update. Leave this at *1 to
update all hostnames flagged as belonging to zone 1 in
your ChangeIP.com setup. Or, replace with a single
hostname to update only that host.
PollTime amount of time (in seconds as a digital i.e. 5 minutes
= 300d) between queries to check the IP address (do
not attempt to modify this below 5 minutes or your
account may be locked out)
Timeout time in seconds (default = 15s) after which the module
should give up if it can't reach a server.

Support

This module is supported by ControlWorks Consulting, LLC. Should you need support for this module please email support@controlworks.com or call us at 440-449-1100. ControlWorks normal office hours are 9 AM to 5 PM Eastern, Monday through Friday, excluding holidays.

Before calling for support, please ensure that you have loaded and tested operation using the included demonstration program and touchpanel(s) to ensure that you understand the correct operation of the module. It may be difficult for ControlWorks to provide support until the demonstration program is loaded.

Updates, when available, are automatically distributed via Email notification to the address entered when the module was purchased. In addition, updates may be obtained using your username and password at <http://www.thecontrolworks.com/customerlogin.aspx> .

Distribution Package Contents

The distribution package for this module should include:

ChangeIP.com Crestron Module Help File v4.pdf	this help file
ChangeIP.com v4..umc.....	Crestron user module to insert in program
String Comparison v3.usp	SIMPL+ module that is inside the UMC
String Comparison v3.ush	SIMPL+ module header file
ChangeIP_Address_Extractor_v1.usp.....	SIMPL+ module that is inside the UMC
ChangeIP_Address_Extractor_v1.ush.....	SIMPL+ module header file
Base64 Encode Engine v1.usp	SIMPL+ module that is inside the UMC
Base64 Encode Engine v1.ush	SIMPL+ module header file
ChangeIP.com Test Program v4.smw.....	example program (PRO2)

Revision History

- V4 caleb@controlworks.com 2009.01.27
-Changed parsing logic to prevent failed updates when retrieving the IP address
- V3 tom@controlworks.com 2006.07.20
-Added parameter for timeout length
-Increased default timeout length
-Resolved issue in which client would not attempt to update again after a failed attempt
- lincoln@controlworks.com 2006.01.31
-Implemented revised DNS testing logic
- V2 tom@controlworks.com 2005.12.15
-Changed reply status parsing to use XML for future compatibility
- V1 tom@controlworks.com 2005.11.22
-Initial release.

Development Environment

This module version was developed on the following hardware and software. Different versions of hardware or software may or may not operate properly. If you have questions, please contact us.

Crestron Hardware	Firmware Version
Crestron PRO2 Processor	3.155.1243
Software	Software Version
Crestron SIMPL Windows	2.10.32
Crestron Database	20.06.016.00
Crestron Device Database	20.04.006.00

ControlWorks Consulting, LLC Module License Agreement

Definitions:

ControlWorks, *We*, and *Us* refer to ControlWorks Consulting, LLC, with headquarters located at 701 Beta Drive, Suite 22 Mayfield Village, Ohio 44143-2330. *You* and *Dealer* refer to the entity purchasing the module. *Client* and *End User* refer to the person or entity for whom the Crestron hardware is being installed and/or will utilize the installed system. *System* refers to all components described herein as well as other components, services, or utilities required to achieve the functionality described herein. *Module* refers to files required to implement the functionality provided by the module and may include source files with extensions such as UMC, USP, SMW and VTP. *Demo Program* refers to a group of files used to demonstrate the capabilities of the Module, for example a SIMPL Windows program and VisionTools Touchpanel file(s) illustrating the use of the Module but not including the Module. *Software* refers to the Module and the Demo Program.

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Provision of Support

We provide limited levels of technical support only for the most recent version of the Module as determined by Us. We do not provide support for previous version of the module, modifications to the module not made by Us, to persons who have not purchased the module from Us. In addition, we may decline to provide support if the Demo Program has not been utilized. We may withdraw a module from sale and discontinue providing support at any time and for any reason, including, for example, if the equipment for which the Module is written is discontinued or substantially modified. The remainder of your rights and obligations pursuant to this license will not be affected should ControlWorks discontinue support for a module.

Modification of Software

You may not decrypt (if encrypted), reverse engineer, modify, translate, disassemble, or de-compile the Module in whole or part. You may modify the Demo Program. In no event will ControlWorks Consulting, LLC be liable for direct, indirect, incidental or consequential damages resulting from You modifying the Software in any manner.

Indemnification/Hold Harmless

ControlWorks, in its sole and absolute discretion may refuse to provide support for the application of the Module in such a manner that We feel has the potential for property damage, or physical injury to any person. Dealer shall indemnify and hold harmless ControlWorks Consulting LLC, its employees, agents, and owners from any and all liability, including direct, indirect, and consequential damages, including but not limited to personal injury, property damage, or lost profits which may result from the operation of a program containing a ControlWorks Consulting, LLC Module or any component thereof.

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