



## SP PRO Communications – Internet Connectivity

### Introduction

Being able to remotely communicate with a SP PRO installation can provide many advantages. These include the ability to monitor system performance, adjust settings and potentially correct problems before they cause any power outages.

This technical note aims to provide information to enable a SP PRO connected to a LAN (Local Area Network) to connect through to remote locations via the internet.

The application note is targeted at persons who are familiar with general router and gateway configuration plus operation of Domain Names Servers (DNS). The application note only deals with settings required in a router but cannot detail specific step by step instructions as this equipment is not supplied by Selectronic.

### NOTICE

SP LINK and the SP PRO(via a serial to ethernet adaptor) supports connection via a network. The document is provided AS IS and Selectronic are unable to provide any further support other than send you the document due to the many complexities involved with correctly establishing the IP connection.

Selectronic does not provide IT support and it is for this reason that the documentation can only be provided AS IS.

### MINIMUM REQUIREMENTS

The installation must have permanently connected internet connection, not a dial-up service and have successfully established a LAN connection to the SP PRO – see Technical Note 27: SP PRO Communications – LAN Connectivity.

All examples will reference the Perle IOLAN DS1 and use values as per the LAN Connectivity application note.

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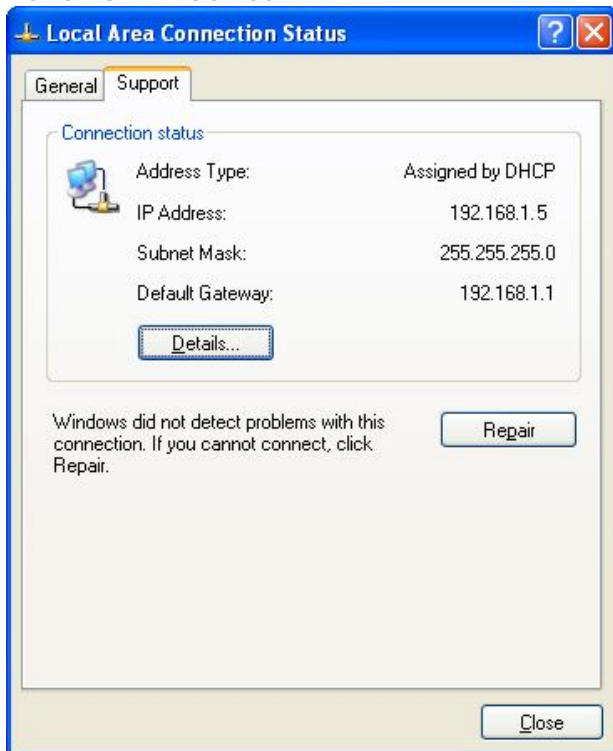


## EXISTING NETWORK CONFIGURATION

The IP (Internet Protocol) address of the internet gateway (gateway: device that connects the local computer the internet) or Default Gateway must be determined. The gateway is usually the device that connects the ADSL line or satellite transceiver to the local computers.

The Support tab in Windows XP Local Area Connection Status shows the Default Gateway address.

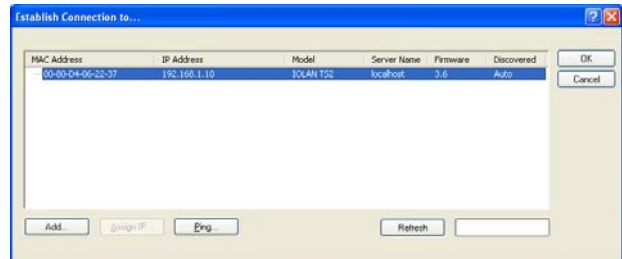
The gateway address must be set into the Perle IOLAN device.



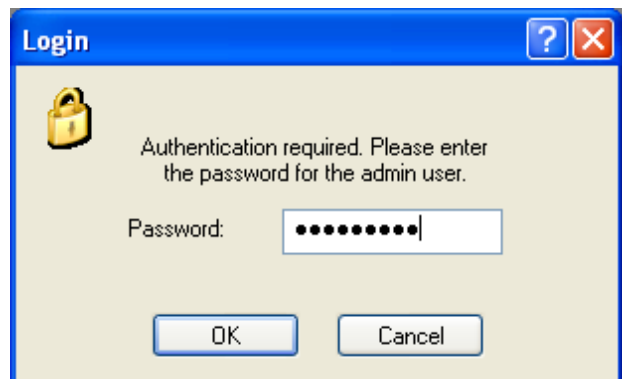
## Perle IOLAN DS1 Configuration

The IOLAN must have the default gateway set to correctly communicate with the internet.

Run the Perle Device Manager. If the IOLAN device can be found on the network, the following screen will be shown, listing the IOLAN device.

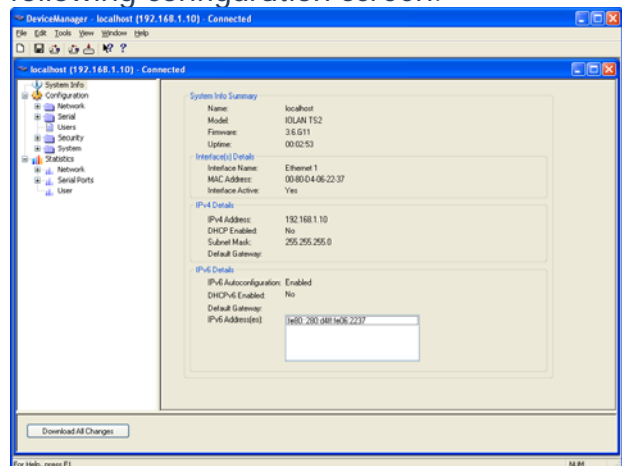


Click Ok to connect to IOLAN. A password will be required.



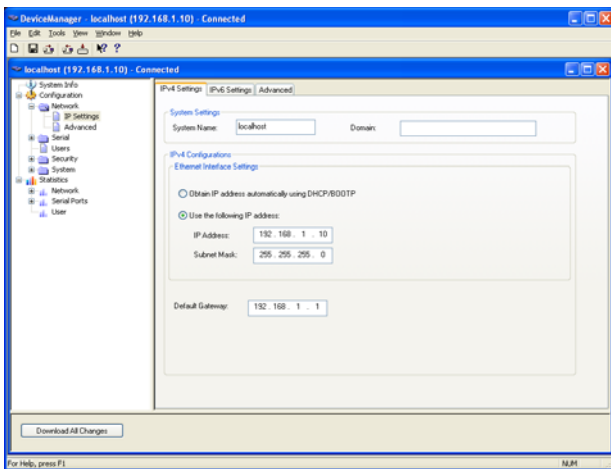
Default IOLAN password is "superuser".

The system will then present you with the following configuration screen.



Double click Network, then select IP Settings

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Enter the gateway IP address determined above for your network in the setting Default Gateway. In this example Default Gateway address is 192.168.1.1.

The changes need to be downloaded and then the IOLAN must be rebooted, in the same way described in LAN Connectivity application note.

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## Router Configuration

### FIREWALL

Routers typically have inbuilt firewalls that prevent unwanted network traffic from reaching the internal network. The router must be configured to 1. allow particular requests to come through and 2. to direct those request to the Perle IOLAN DS1.

This is achieved by using a system called Network Address Translation (NAT) and Port Forwarding. The router needs to have one ports forwarded the serial data (10001) –

External Port	Protocol	Internal Port	Address
10001	TCP	10001	192.168.1.10

TCP – Transmission Control Protocol

Depending on the router:

    may specify a start and end port numbers – just use the same number in both

    may request a name for server – a name that helps remember what it is for is useful.

### FIXED IP AND DYNAMIC IP

Every device connected to the internet must have an IP address. These addresses can be either fixed or locked to the device or they can be dynamic or changeable when the device connects to the internet. The remote computer wanting to connect to the SP PRO needs to know the IP address of the router in order to connect through to the IOLAN. These addresses are also assigned

names such as [www.sppro.com.au](http://www.sppro.com.au) which is easier to remember and more meaningful than 218.214.211.222.

If your internet service provides a:

    a) Fixed IP address -> determine what this address is and skip remainder of section.

    b) Dynamic IP address -> continue reading

Dynamic IP addresses cannot be determined except at the device itself however the device can be assigned a Host Name which remains the same whilst the IP address can change.

The router needs to have a built in Dynamic DNS (Domain Name Server) service to allow the router to tell the DNS what the IP address is.

### Dynamic DNS

In order to use Dynamic DNS you must

1. register with a service provider.
2. create a host name
3. enter host name and user details into router

Check which service providers are supported by your router. [DynDNS.com](http://DynDNS.com) provides some free services which work very well.

<http://www.dyndns.com/services/dns/dyndns/howto.html>

The hostname can then be used in the SP LINK software to determine the IP address.

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## SP LINK Connection Settings

The connection settings are similar to what is required in the when connecting via the LAN.

Run SP LINK

Select **Site Information**

Select **Connection Settings**

Set Connection Type to **Network**

Enter IP Address – **Enter hostname or IP address for your internet router**

Enter Port – **10001**

*Note: SP LINK Port and IOLAN TCP Port must match.*

SP LINK is now set to connect through to the internet via the router to the IOLAN device.

Click **Connection, Connect**.

SP LINK will attempt to establish the connection to the SP PRO in the normal way.

## Connection Security

To ensure only authorised people connect via the internet to the SP PRO, it is strongly recommended that the Login Password be changed from the default of Selectronic SP PRO.

Change the Login Password under Service Settings and set the new Login Password in the connection settings.

## Additional Information

If you experience difficulties with the above, please consult with an IT specialist.

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The screenshot shows the 'SP LINK' software window with the 'Connection Settings' tab selected. The 'Site Details' section includes fields for Site Name (SP PRO Energy Centre), Site Contact, Site Phone, Address, System Integrator, and Selectronic Accreditation No. The 'Connection Settings' section includes fields for Connection Type (Network), Login Password (Selectronic SP PRO), Modem Phone Number, Modem Initialisation, Hostname or IP Address (192.168.1.10), and Port (10001). A 'Find SP PRO' button is also visible.