

## BB2-7010 Client Write Behavior Change in v2.40.4

This behavior applies only when the BACnet client is writing from a local Output (commandable) object to a remote Output (commandable) object. A BACnet client write map would previously write the relinquish default value of the local object if none of the local object's command priorities were set. The new behavior is that the client will write a relinquish to the map's priority level in the remote object if none of the local object priorities are set. This behavior will be true regardless of whether the local object priority levels were set from the BACnet network or from the web UI.

## Phantom Modbus Slave Registers Added in v2.40.4

The BB2-7010 can be configured as a Modbus slave and BACnet client, thus giving some other Modbus device like a PLC control over BACnet output objects via the BB2-7010 gateway. Because Modbus knows nothing about "relinquish" (or command priorities), there is no way to write to a Modbus register such that the BACnet object will relinquish a commandable priority level. When the BB2-7010 is acting as a Modbus slave, writing to holding register addresses that map to Output objects will result in the Modbus command priority 10 being set. (The Modbus slave command priority is currently fixed at 10.) But there has been no way to relinquish that command priority.

As of firmware version 2.40.4, phantom registers have been added which are recognized only by the Modbus slave and are write-only registers. The phantom registers are accessible by calculating the slave register number of the Output object as defined in the user guide, and then adding 20,000 to the holding register number. Writing any value to this register number will relinquish the Modbus command priority for that object. An exception will be returned if you try to relinquish a non-commandable object.

In order to give Modbus full control over a commandable object in some other BACnet device, it is necessary to program your Modbus master to write to one holding register to set the output, and write to a different register (the phantom register) to relinquish the output. The addresses you use will be derived from the local Output object number you choose as the local object in the gateway. To cause that object to then be transmitted to the remote BACnet device, you need to set up a client write map as illustrated below. This illustration is only typical of the minimum requirements, your map may appear different.

The screenshot shows the 'Client Write Map' configuration page in the BB2-7010 web interface. The navigation tabs at the top include 'Data Objects', 'Modbus', 'BACnet', and 'System Setup'. Under 'BACnet', there are sub-tabs for 'BACnet IP Client', 'Diagnostics', and 'Client Write Map'. The page title is 'Client Write Map' and it includes a description: 'This page creates a map entry that writes data to one or more remote BACnet IP servers from data contained here.'

The configuration fields are as follows:

- Map #: 1
- Read local object: AO 1 (named Analog Output 1)
- Apply default value of: 0.00000 (checkboxes for 'at power-up and/or when 0.0 seconds have elapsed with no host update' are unchecked)
- Write remote register:  any time local object has changed by 0.00000 or  when 0.0 seconds have elapsed with no change.
- Otherwise write remote register unconditionally. In any event, when writing remote register, apply local object data as follows:
- Apply scale: 0.00000 and offset: 0.00000. Then, using index 0 and priority 5 proceed to
- Write property: 85 encoded as data type Real
- Write to instance #: 1 of object type Analog Output at device BB2-7010
- Repeat this process:  at least  no more than every 0.0 seconds.
- # Client Write Maps Enabled: 2

Buttons for 'Update', '< Prev', 'Next >', 'Insert', and 'Delete' are visible.