

Communication options overview

1. Introduction

This document outlines potential methods of communicating with the Megatron Controller from a Building Management System (BMS) or Business Network.

The intent is to show potential configurations that may meet install requirements from a network security perspective while allowing the Controller to still communicate with the Web Advantage Cloud platform.

This is to be read in conjunction with the documentation found at www.advantagecontrols.com/literature.php it is recommended to liaise with your local supplier of the equipment to ensure that the configuration you are interested in can be provided for your specific installation.

2. Controller only

The controller can act as a completely standalone unit with no outside communication at all.

This may require more frequent site visits to ensure proper operation and the appropriate dosing/control is maintained.

3. Low Level interface

Controller is equipped with I/O for connecting to the BMS with digital and analogue points allowing process variables and faults to be read and acted on by the Building controls

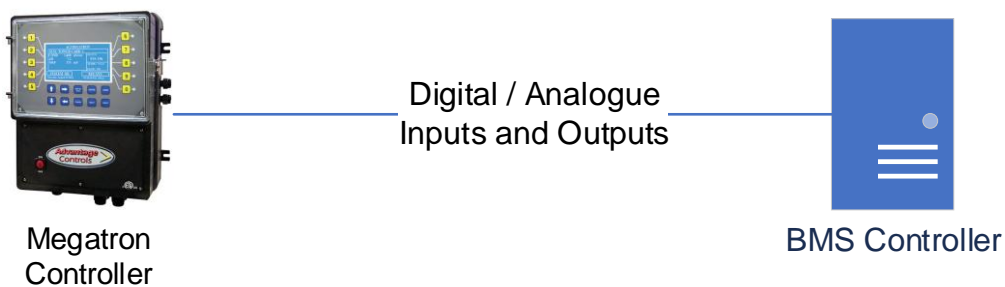


Fig 1

4. Low level and network communications

This is where the Controller communicates with the BMS as per 3, but IP connectivity is added.

This could be via the business network if an appropriately secure way to allow the controller to communicate with the Web Advantage servers is able to be configured.

Alternately a separate 4G modem can be added to give a parallel conduit to the Web Advantage servers which means no controller communication passes over the business network.

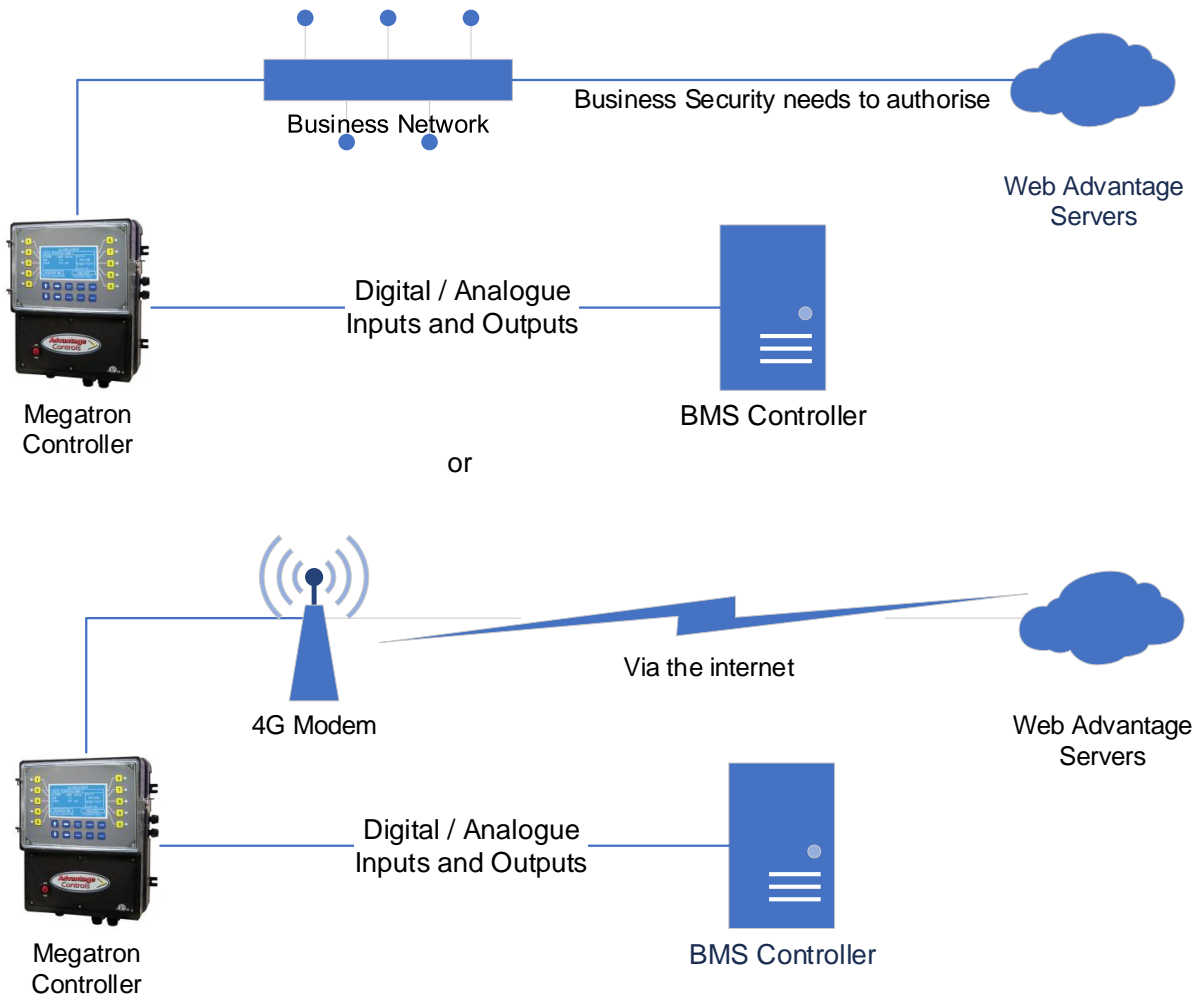


Fig 2

5. Modbus

Modbus is a well understood open industrial protocol often used for electrical power meters in BMS controls. Wikipedia <https://en.wikipedia.org/wiki/Modbus>.

It can run as Modbus TCP over an IP network using port 502 which is an option native to the Megatron Controller if the correct comms card is specified.

If there is a pathway to the internet from the BMS/Control network, then the Controller can also connect to the Web Advantage Servers, alternately a modem could be used to avoid a path through the business network.

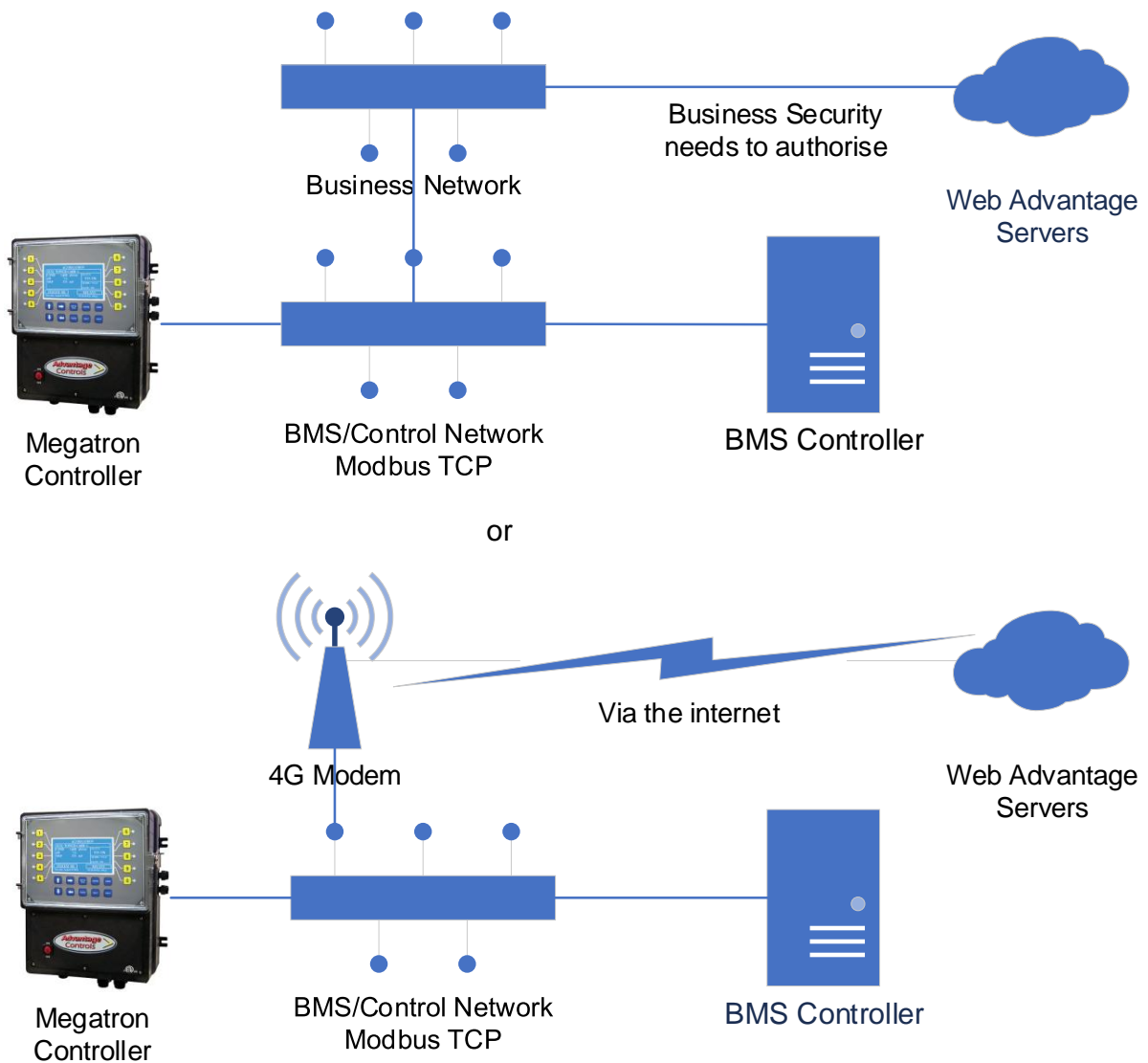


Fig 3

Modbus RTU which is connected by RS 485 serial cabling is the other common Modbus variant, this is not natively supported by the Megatron and requires a Modbus Serial to IP gateway device that can translate the protocol and ensure that the correct Modbus RTU address connects with the correct IP for data transfer. A modem can be added to the private network to connect to the Web Advantage Servers.

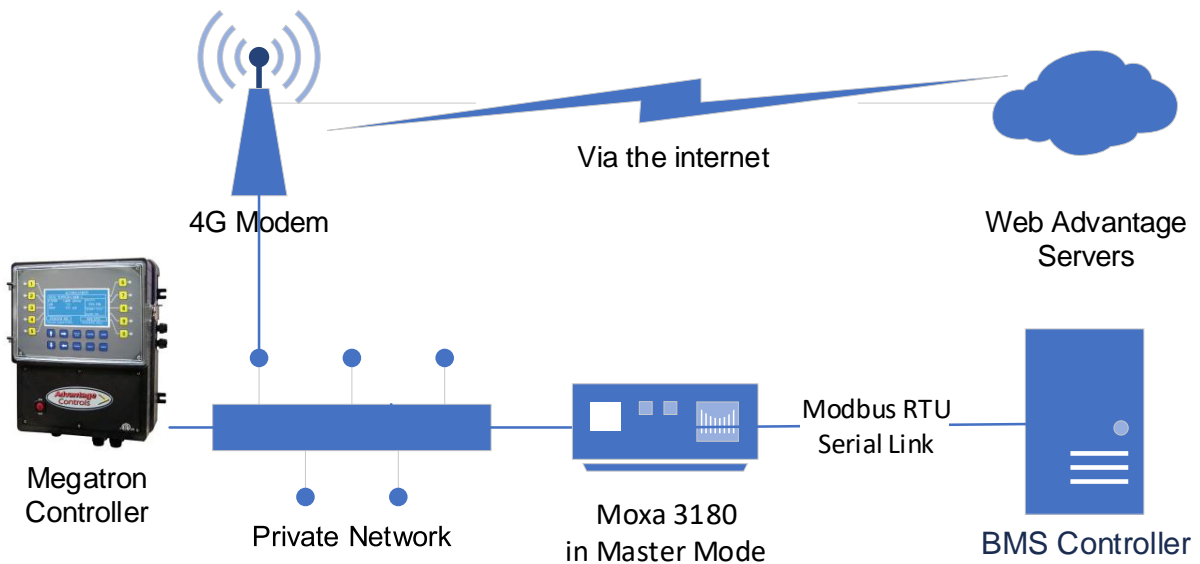


Fig 4

Alternate more complex options are possible to configure where network separation is required but Modbus IP is preferred. Consultation on options for this type of installation is recommended.

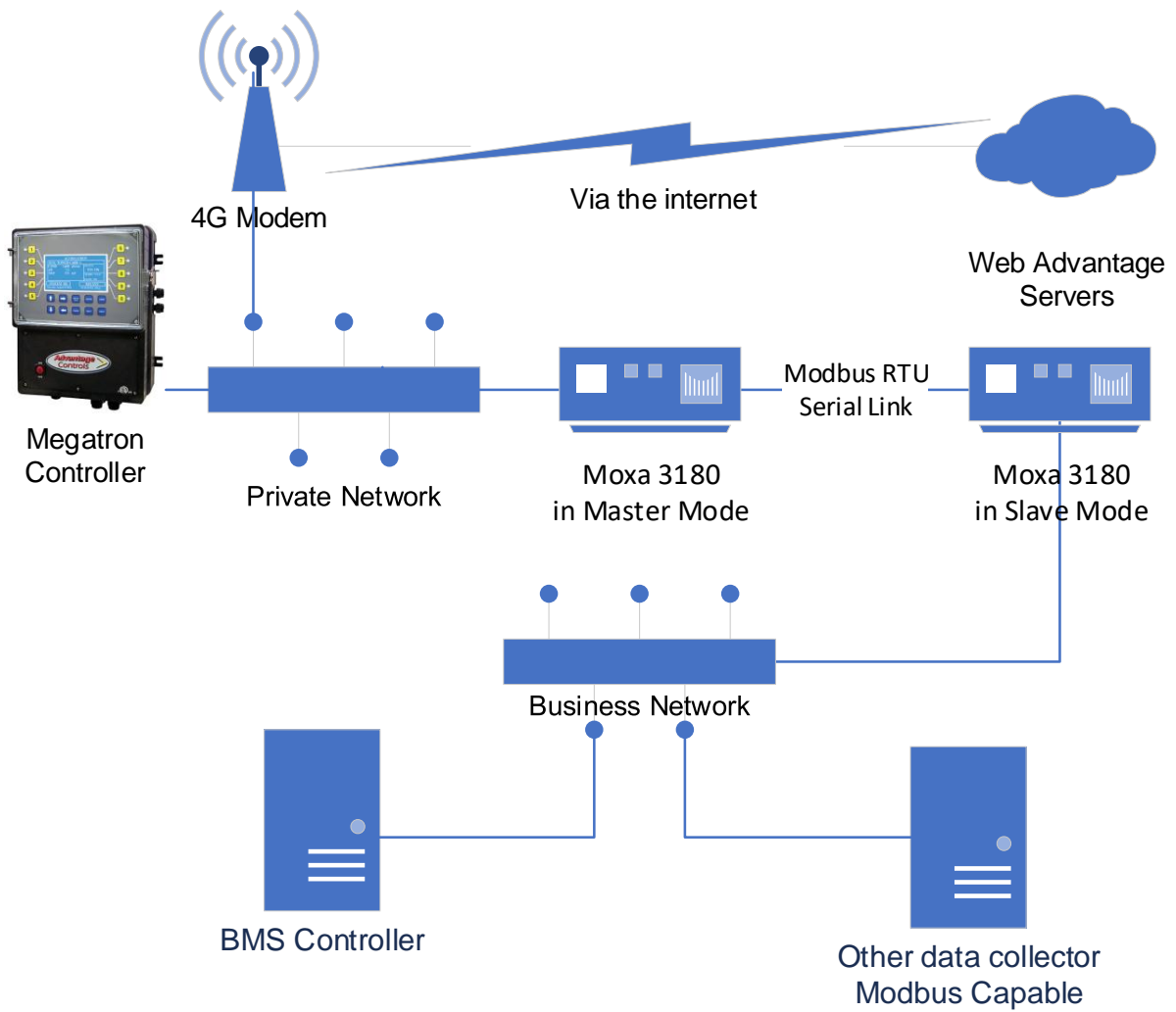


Fig 5

6. BACNet

From Wikipedia <https://en.wikipedia.org/wiki/BACnet>

BACnet was designed to allow communication of building automation and control systems for applications such as heating, ventilating, and air-conditioning control (HVAC), lighting control, access control, and fire detection systems and their associated equipment.

BACnet IP is an option native to the Megatron Controller if the correct comms card is specified, the default network port is 47808. You will need to change the controller's device instance number to one that works with your BACnet configuration as it ships as 4194303 which is known as unconfigured.

If there is a pathway to the internet from the BMS/Control network, then the Controller can also connect to the Web Advantage Servers, alternately a modem could be used to avoid a path through the business network.

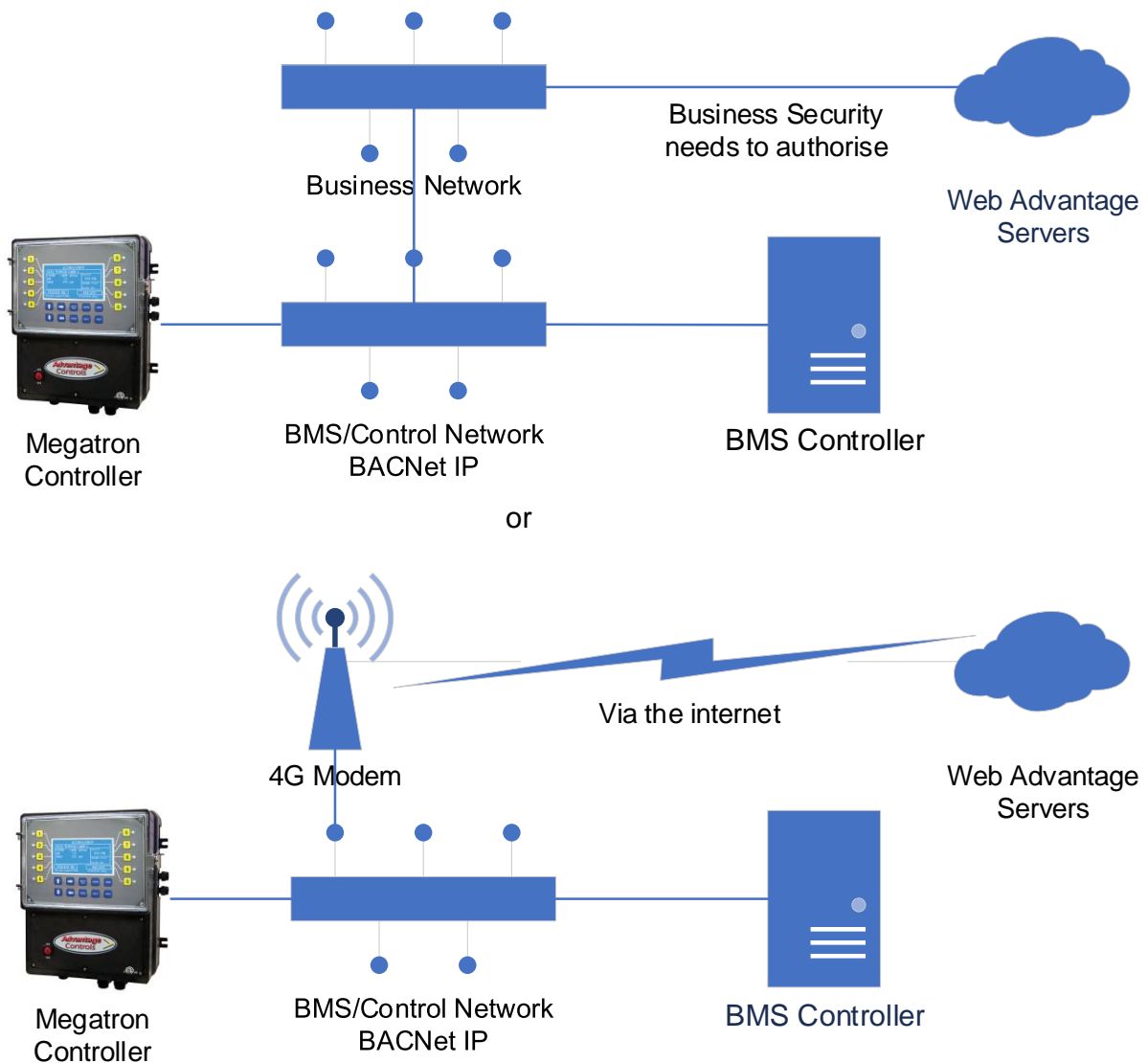


Fig 6

If the Megatron controller needs to integrate with a BACNet MSTP control system, then a gateway like a Loytec LIP-ME201C or similar will need to be installed to carry out the IP to Serial conversion.

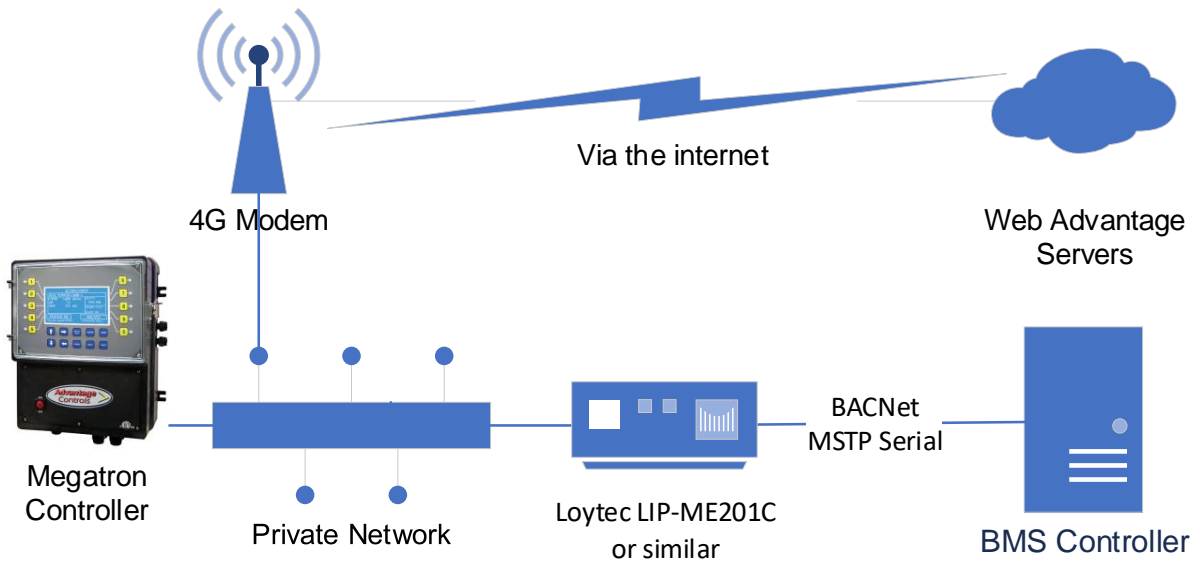


Fig 7

If requiring a BACNet gateway to communicate with the Megatron Controller it is recommended to consult with your controls vendor and choose a device that they have experience with as BACNet gateways are significantly more complex to configure and manage than Modbus equivalents.