



Chipkin's BBMD – BACnet Broadcasts Solved

Anything that prevents broadcasts also prevents BACnet communication. The solution is Chipkin's new BBMD applications. Released in Dec2020, these apps handle BACnet messages crossing routers and subnets. Both BDT and FDT are supported.

Marriage counseling
for BACnet

CAS BBMD Windows and
Linux apps

BACnet cannot cross subnets. The BACnet
BBMD Application will forward any
broadcast messages received on its subnet
to every entry in its broadcast distribution
table (BDT) and foreign device table (FDT).
We also have device solutions

The graphic features silhouettes of a man and a woman standing in a field at sunset. The text is overlaid on the image. The CHIPKIN logo is in the bottom right corner.

The Challenges

BACnet/IP networks use UDP to communicate. UDP is a connectionless protocol therefore when a message is broadcasted on one subnet, routers do not forward the message onto other subnets. This means that a BACnet Client will not be able to discover other BACnet servers on different subnets using a UDP broadcast WHO-IS message.

Routers join IP networks together so that messages from one network can be sent to another. Most routers do not forward broadcast messages, and this means discovery can't discover devices on another network.

The Solution

To solve this problem, BACnet provides a technology called BBMD - BACnet/IP Broadcast Management Device.

Overall, the technology is simple. You install a BBMD (might be a physical device or just a software application on a computer) on each network. You can configure the BBMD by specifying the IP Address and mask of the each BBMD. This makes both BBMD configs identical. When the one BBMD receives a broadcast, it forwards the messages to the other BBMD, which in turn re-broadcasts on the other network. They are configured by BDT files and these may be modified on the fly using select BACnet services.

The technology also provides for foreign device registration. This allows a device on one network to communicate with a device on another network by using the BBMD to forward and route the messages.

How It Works

The BBMD application can be installed on a Windows or Linux server at the site. Chipkin also has 'on-device' solutions if you don't have a server.

BACnet/IP uses IP/UDP broadcast messages to communicate on local subnet. If two BACnet/IP devices are on different subnetworks (VLANs, NAT Routers, etc...) and need to communicate with each other, a BBMD device is needed to facilitate sending and rebroadcasting the messages on the different sub networks.

Scalability

These applications can scale up to handle entire sites handling 10's of thousands of points.

Conclusions

The biggest problem with the cloud trying to read BACnet data from a site is the problem of BACnet not being able to pass through a router or when the site is networked segmented because in both cases broadcasts are required.

CAS tools are easy to install and configure

About Chipkin

Chipkin Automation develops protocol drivers. Some are sold and supported by MSA. Some are sold and supported by Chipkin. Chipkin are data communication specialists with 20+ years of experience. The OPC UA driver will be sold and supported by both MSA and Chipkin.