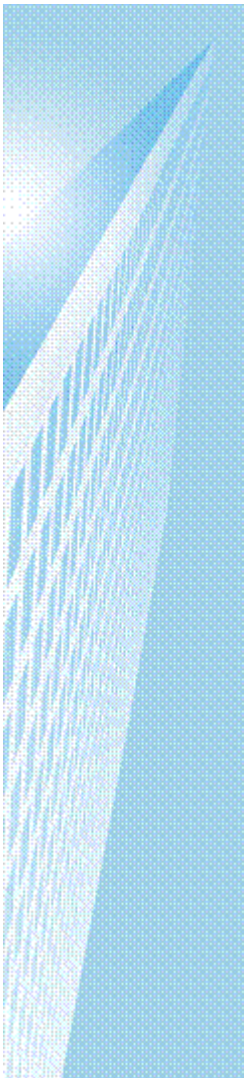


Cimetrics Inc.

B3060 Cimetrics BR-BBMD



User Manual

Revised September 2018

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Introduction



B3060 – Cimetrics BR-BBMD manages the flow of BACnet/IP broadcast messages within a BACnet/IP network that spans multiple IP subnets.

The BBMD directly forwards a BACnet broadcast message initiated by a BACnet/IP device on its subnet to peer BBMDs on the other subnets with BACnet/IP devices. Upon arrival at a destination subnet, the message is then broadcast on that subnet by a peer BBMD.

B3060 can be configured to communicate with up to 140 peer BBMDs. The B3060 also supports registration by Foreign Devices.

The BACnet BBMD device is optimized for high bandwidth usage due to its 32-bit embedded Linux-based OS and our BACstac/32 protocol stack. This BACnet software is extremely robust and is the leading third party BACnet code used in thousands of devices from prominent industry manufacturers.

To find out more about BACnet Broadcast Management and how to build a wide area network with BACnet you may refer to this [article](#) written by Bill Swan.

Before you start

Before installing B3060, gather all the data about your network configuration and get the [B3060 Quick Start](#) document from our website:

1. Information about the BR-BBMD environment (topology and application)
 - 1.1 BBMD's in the BACnet/IP "LAN".
 - 1.2 TCP/IP routers, gateways, switches and hubs in the topology.
 - 1.3 Other BACnet Routers in the LANs.

2. IP Addresses of remote BBMDs and Router/Gateways in the TCP/IP networks.

3. TCP/IP information for the B3060 Device:
 - 3.1 IP Address
 - 3.2 Subnet Mask
 - 3.3 Gateway Address
 - 3.4 UDP socket desired

You should have the following ready:

- The B3060 Hardware;
- [The B3060 Quick Start document](#);
- Power supply and power cord;

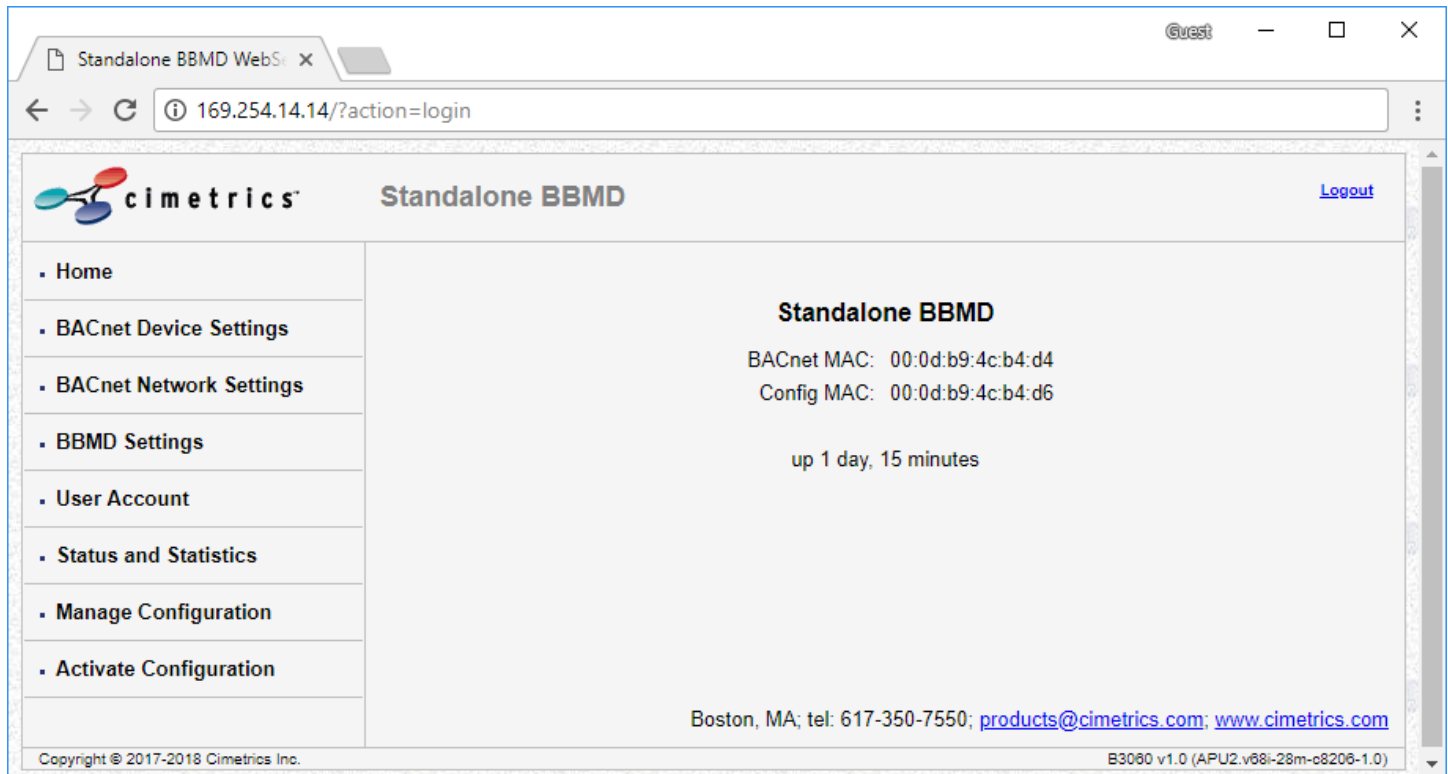
Router Configuration

1. B3060 web interface overview.

Enter B3060's IP address in your browser.

Enter the login “admin” and password written on the label on the bottom of your B3060. Later you can add a new user account if you want, but the “admin” password cannot be changed..

Once you have successfully logged in you will see the home page which shows some basic information about the B3060:



To select a page you should click on the menu item on the left side of B3060 screen. After you have finished modifying the configuration on any page click “OK” on the bottom of the page to accept your changes.

After finishing all configurations choose “**Activate Configuration**” to store your changes on the disk. It is recommended that you check all parameters again on changed pages after activation of configuration.

2. BACnet Device Settings

This page allows you to view/modify BACnet Device settings of the BBMD. Make sure that the Device Instance Number and Device Name are unique across the whole BACnet internetwork. Keep in mind that the BACnet standard and the BTL require that Device Discovery be turned on.

The screenshot shows a web browser window with the URL `169.254.14.14/?page=device`. The page title is "Standalone BBMD" and it features the Cimetrics logo. A navigation menu on the left lists: Home, BACnet Device Settings (selected), BACnet Network Settings, BBMD Settings, User Account, Status and Statistics, Manage Configuration, and Activate Configuration. The main content area is titled "BACnet Device Settings" and contains the following text: "This page allows to view/modify BACnet Device settings of the BBMD, or restore them to factory default. Device Instance Number and Device Name should be unique across the whole BACnet internetwork. BACnet standard and BTL require Device discovery be turned on." Below this text is a table with three columns: Parameter, Value, and Description.

Parameter	Value	Description
<input checked="" type="checkbox"/> Enable discovery of this BACnet Device		Deselect this checkbox to disable sending I-Am/I-Have messages. BBMD operation is not affected by this parameter. (default: enabled)
Instance Number	1427030	Instance Number of the Device Object (default: 1427030)
Device Name	Standalone BBMD 1427030	Name of the Device Object (default: "Standalone BBMD 1427030")

At the bottom of the settings table, there are two buttons: "OK" and "Restore default".

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3. BACnet Network Settings

Here you specify or modify BACnet network settings or restore them to the factory default settings.

The screenshot shows a web browser window with the URL `169.254.14.14/?page=bippub`. The page title is "Standalone BBMD" and it features the Cimetrics logo. A navigation menu on the left includes: Home, BACnet Device Settings, BACnet Network Settings (selected), BBMD Settings, User Account, Status and Statistics, Manage Configuration, and Activate Configuration. The main content area is titled "BACnet Network Settings" and contains the text: "This page allows to view/modify BACnet network settings, or restore them to factory default." Below this is a table with the following data:

Parameter	Value	Description
IP Address	10.14.180.214	IP address of the BBMD (default: 10.14.180.214)
Network Mask	255.255.0.0	Subnet mask (default: 255.255.0.0)
Default Gateway	10.14.0.1	IP address of default gateway (default: 10.14.0.1)
BACnet UDP Port	47808	BACnet/IP UDP port number (default: 47808)

At the bottom of the settings area, there are two buttons: "OK" and "Restore default". The footer of the page contains the text: "Copyright © 2017-2018 Cimetrics Inc." and "B3060 v1.0 (APU2.v68i-28m-c8206-1.0)".

4. BBMD Setting of the BACnet network.

This page allows to view or modify BBMD settings attached to the BACnet network.

The screenshot shows a web browser window with the URL `169.254.14.14/?page=bbmd`. The page title is "Standalone BBMD" and it features the Cimetrics logo. A navigation menu on the left includes: Home, BACnet Device Settings, BACnet Network Settings, BBMD Settings (selected), User Account, Status and Statistics, Manage Configuration, and Activate Configuration. The main content area is titled "BBMD Settings of the BACnet network" and includes the following text: "This page allows to view/modify settings of BBMD attached to the BACnet network. The Discard Changes button re-reads actual BBMD from the BACnet device."

<input checked="" type="checkbox"/> Enable BBMD	Check this to enable BBMD (default: enabled)
<input checked="" type="checkbox"/> Enable Foreign Device Registration	Check this to accept Foreign Device Registrations if BBMD is ENABLED (default: enabled)
<p>BDT Entries:</p> <div style="border: 1px solid #ccc; height: 150px; width: 100%;"></div>	<p>Entry format: "ip-address/netmask:port" Example: 192.168.1.2/255.255.255.0:47809 Omit "/netmask", then 255.255.255.255 is assumed Omit ":port", then 47808 is assumed Thus 10.14.15.16 is equivalent to 10.14.15.16/255.255.255.255:47808</p> <p>Lines starting with "#" are comments and retained over reboots. Invalid lines are automatically commented out. No more than 140 BDT entries are allowed.</p>

At the bottom of the settings area, there are three buttons: "OK", "Advanced", and "Discard changes". The footer of the page contains "Copyright © 2017-2018 Cimetrics Inc." on the left and "B3060 v1.0 (APU2.v68i-28m-c8206-1.0)" on the right.

To modify Advanced BBMD settings click on **Advanced** button – it will open up advanced BBMD parameters. Here you can specify Two-Hop forwarding or Reject Write-BDT Requests.

The screenshot shows a web browser window titled "Standalone BBMD WebS: x" with the address bar containing "169.254.14.14/?action=bbmd". The interface is divided into a left sidebar and a main content area. The sidebar contains three menu items: "Status and Statistics", "Manage Configuration", and "Activate Configuration". The main content area is titled "BDT Entries:" and features a large text input field. To the right of the input field, there is a text box providing instructions on the entry format: "Entry format: 'ip-address/netmask:port'", an example "192.168.1.2/255.255.255.0:47809", and rules for omitting parts of the format. Below the input field, there is a section for "Advanced BBMD parameters" with two checkboxes: "Two-Hop Forwarding" (checked) and "Reject Write-BDT requests" (unchecked). At the bottom of the main content area, there are three buttons: "OK", "Basic", and "Discard changes". The footer of the browser window contains the copyright information "Copyright © 2017-2018 Cimetrics Inc." and the version string "B3060 v1.0 (APU2.v68i-28m-c8206-1.0)".

Standalone BBMD WebS: x

169.254.14.14/?action=bbmd

- Status and Statistics
- Manage Configuration
- Activate Configuration

BDT Entries:

Entry format: "ip-address/netmask:port"
Example:
192.168.1.2/255.255.255.0:47809
Omit "/netmask", then 255.255.255.255 is assumed
Omit ":port", then 47808 is assumed
Thus 10.14.15.16 is equivalent to 10.14.15.16/255.255.255.255:47808

Lines starting with "#" are comments and retained over reboots.
Invalid lines are automatically commented out.
No more than 140 BDT entries are allowed.

Advanced BBMD parameters

<input checked="" type="checkbox"/> Two-Hop Forwarding	Check this if IP router to this network does not forward broadcasts (default: enabled)
<input type="checkbox"/> Reject Write-BDT requests	BDT entries can be changed only via this web-setup (default: disabled)

OK Basic Discard changes

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5. User Account Settings

Here you can change login information. Keep in mind that you can never change your assigned admin password, which is printed on a label on the bottom of the B3060. You can however create one new user login that you can use to login to the BBMD device’s configuration port.

The screenshot shows a web browser window with the following details:

- Browser tab: Standalone BBMD WebS...
- Address bar: Not secure | 169.254.14.14/?page=passwd
- Page title: Standalone BBMD
- Page content:
 - Left sidebar menu:
 - Home
 - BACnet Device Settings
 - BACnet Network Settings
 - BBMD Settings
 - User Account
 - Status and Statistics
 - Manage Configuration
 - Activate Configuration
 - Main content area:

Change User Account Login and Password

Parameter	Value	Description
Admin password:	<input type="text"/>	Enter admin password to authorize.
User login:	<input type="text"/>	User login to access this BBMD WebSetup. Erase login to disable account.
New user password:	<input type="text"/>	Enter new user password.
Confirm new password:	<input type="text"/>	The same user password.
- Page footer:
 - Copyright © 2017-2018 Cimetrics Inc.
 - B3060 v1.0 (APU2.v68i-28m-c8206-1.0)

6. Statistics

This page shows statistics for the routing table in B3060, Foreign Devices subscribed to B3060 BBMD and information about B3060 interfaces. Looking at this page you can quickly find out what is happening on your network. You can also save this information in a text file by clicking on the Save Status button.

The screenshot shows a web browser window with the URL `169.254.14.14/?page=stat`. The page title is "Standalone BBMD" and it features the Cimetrix logo. A left-hand navigation menu includes: Home, BACnet Device Settings, BACnet Network Settings, BBMD Settings, User Account, Status and Statistics (selected), Manage Configuration, and Activate Configuration. The main content area is titled "BACnet BBMD Status and Statistics" and contains a "Save Status" button. Below this, the "Top processes" section displays system status information and a process list table.

BACnet BBMD Status and Statistics

[Save Status](#)

Top processes

top - 13:18:02 up 1 day, 19 min, 0 users, load average: 0.08, 0.02, 0.01
 Tasks: 92 total, 1 running, 91 sleeping, 0 stopped, 0 zombie
 %Cpu(s): 0.0 us, 0.0 sy, 0.0 ni, 100.0 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
 KiB Mem: 1941676 total, 116924 used, 1824752 free, 4188 buffers
 KiB Swap: 0 total, 0 used, 0 free. 67824 cached Mem

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
39	root	20	0	0	0	0	S	6.1	0.0	0:19.85	kworker/0:1
4196	www-data	20	0	3560	2356	2080	R	6.1	0.1	0:00.02	top
1	root	20	0	3260	1620	1480	S	0.0	0.1	0:04.84	init
2	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kthreadd
3	root	20	0	0	0	0	S	0.0	0.0	0:01.22	ksoftirqd/0
4	root	20	0	0	0	0	S	0.0	0.0	0:00.00	kworker/0:0
5	root	0	-20	0	0	0	S	0.0	0.0	0:00.00	kworker/0:0H
6	root	20	0	0	0	0	S	0.0	0.0	0:00.03	kworker/u8:0

CPU temperature (relative to critical=105 degrees)

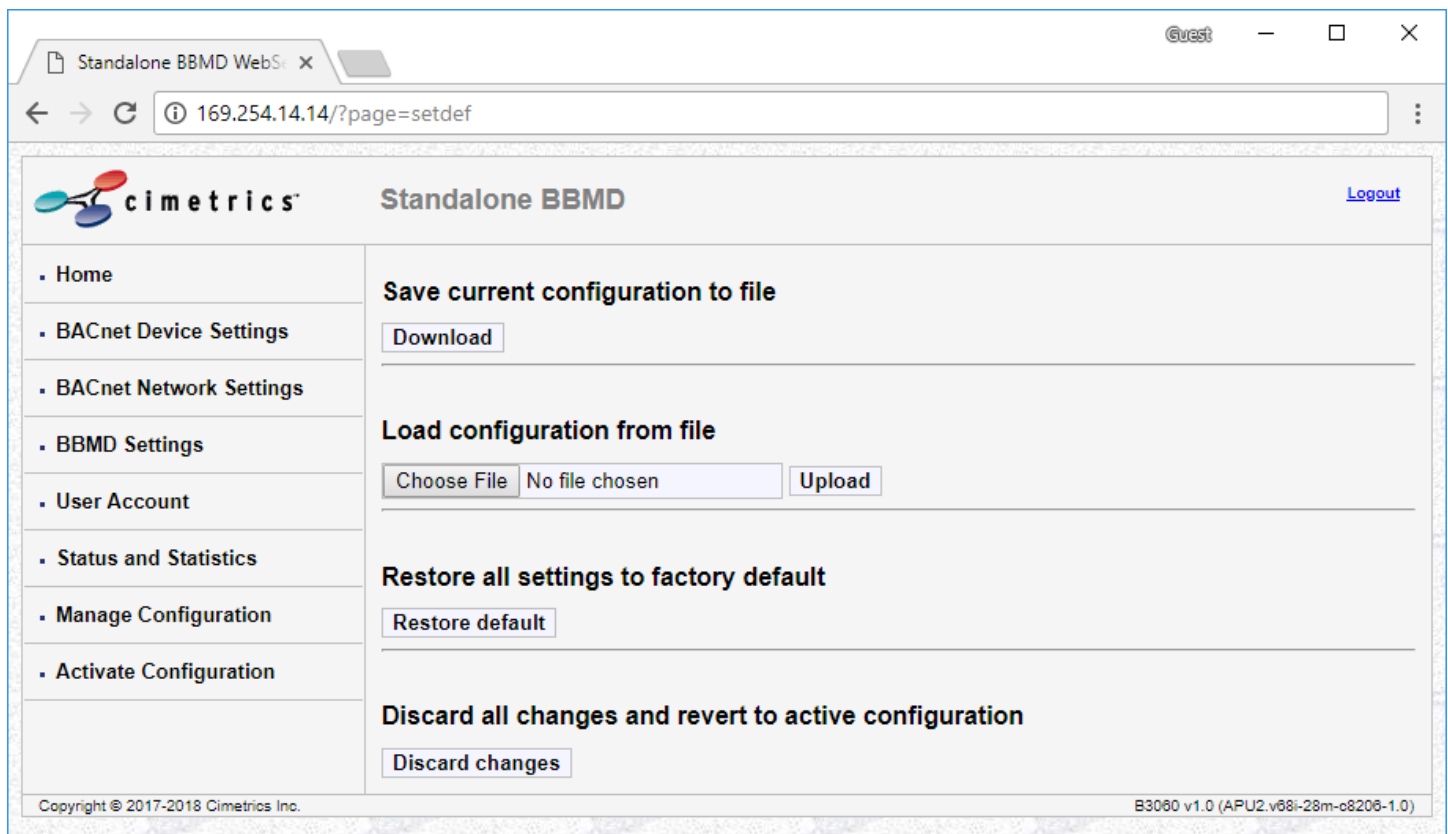
Temp: 53

BACnet IP Interfaces

7. Manage Configuration

B3060 allows you to save and then reload the configuration for archive purposes. Note that passwords are not contained in the configuration file. All configuration editing should be done via the B3060's web interface, not in downloaded files.

It also allows you to restore all settings to factory default or abandon all the changes you made without activating the configuration.



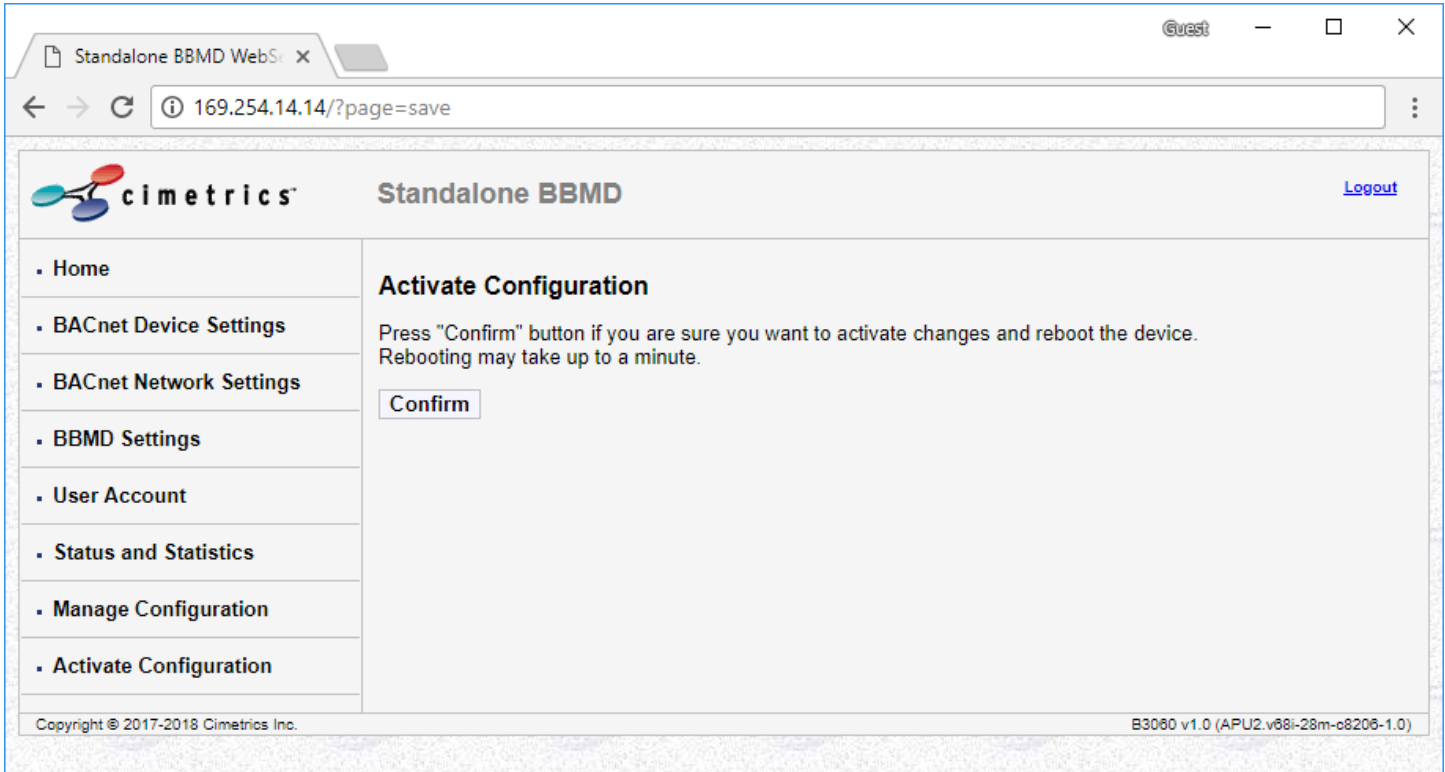
The screenshot shows a web browser window with the address bar displaying `169.254.14.14/?page=setdef`. The page title is "Standalone BBMD" and the Cimetrics logo is visible in the top left. A navigation menu on the left includes: Home, BACnet Device Settings, BACnet Network Settings, BBMD Settings, User Account, Status and Statistics, Manage Configuration, and Activate Configuration. The main content area contains three sections:

- Save current configuration to file**: A "Download" button.
- Load configuration from file**: A "Choose File" button, a text input field containing "No file chosen", and an "Upload" button.
- Restore all settings to factory default**: A "Restore default" button.
- Discard all changes and revert to active configuration**: A "Discard changes" button.

At the bottom of the page, the footer contains "Copyright © 2017-2018 Cimetrics Inc." on the left and "B3060 v1.0 (APU2.v68i-28m-c8206-1.0)" on the right. A "Logout" link is located in the top right corner of the interface.

8. Activate Configuration

Once changes are made to any configuration on the B3060, the changes get saved only after clicking on the "Confirm" button in the Activate Configuration screen. Clicking on this will initiate a reboot of the device and will save the changes that have been made.



The screenshot shows a web browser window with the address bar displaying "169.254.14.14/?page=save". The page title is "Standalone BBMD" and the Cimetrics logo is visible in the top left. A navigation menu on the left includes: Home, BACnet Device Settings, BACnet Network Settings, BBMD Settings, User Account, Status and Statistics, Manage Configuration, and Activate Configuration. The main content area is titled "Activate Configuration" and contains the following text: "Press 'Confirm' button if you are sure you want to activate changes and reboot the device. Rebooting may take up to a minute." Below this text is a "Confirm" button. In the top right corner, there is a "Logout" link. The footer of the page shows "Copyright © 2017-2018 Cimetrics Inc." on the left and "B3060 v1.0 (APU2.v68i-28m-c8206-1.0)" on the right.