PRODUCT DATA SHEET

RÂJANT

BC|Commander®

BreadCrumb® Network Management Software

BClCommander is Rajant's feature-rich monitoring and management application for Kinetic Mesh® networks built with Rajant BreadCrumb wireless nodes. The software helps you configure, monitor, and manage individual BreadCrumbs or groups of BreadCrumbs. Available for both Microsoft® Windows® and Linux® workstations, BClCommander provides a global view of your network through an easy-to-use, intuitive graphical user interface and offers many advanced features that are helpful for deploying and managing large or complex networks. The system uses a secure encrypted link to each BreadCrumb to protect your network information.



While a BreadCrumb-based network can be deployed without BCICommander, BCICommander provides a wealth of features for those network managers who want to exercise greater administrative control over their Rajant networks. As BreadCrumbs are added to the mesh network, maintaining optimal configurations and detecting inconsistencies become increasingly more difficult. BCICommander provides a number of analysis tools that generate summary and detail data. That data can be viewed in BCICommander and exported as PDF reports with a snapshot of the analyzed data as an attachment.

BC|Commander Features Overview

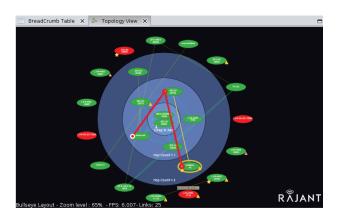
Major BClCommander time-saving features include:

- Point-and-click configuration of multiple BreadCrumbs simultaneously
- Remote firmware updates on multiple BreadCrumbs simultaneously
- Real-time tabular views of the network with customizable columns
- Real-time topological views with a number of network graph layout options such as circle and bullseye layouts
- Wireless client displays showing information such as which Wi-Fi clients are associated with which BreadCrumbs and real-time roaming of those clients
- Configuration of wireless encryption and authentication
- Radio frequency (RF) status displays for all mesh and client links

- Real-time map views of BreadCrumb devices using aerial or street views (via optional GPS receiver or manual location configuration)
- Network configuration reporting and analysis
- InstaMesh® trace to view the path from any node to any device at any moment with auto-refresh and a reverse path display
- Loading of previously saved network snapshots for analysis and troubleshooting
- Configurable units for input and display (metric, imperial, various GPS coordinate formats)
- Control of all other configurable BreadCrumb features such as radio settings, VLANs, access points, ESSID, security credentials, and TRoIP (Tactical Radio over IP)
- Real-time detailed view of each peer link in the mesh showing information such as transmit power, signal to noise ratio (SNR), distance, and associated link rate
- Ability to associate group icons to BreadCrumbs, view the icons in various topological views, and add new user-defined group icons as desired
- Configurable and savable view filters and screen layouts for various administrative tasks such as configuring a map view of trucks and a table view of towers
- Per-BreadCrumb alerts and warnings such as excessive RF noise detection and DFS channel avoidance in effect
- View diagnostic snapshots with snapshot comments
- Control of Dynamic Frequency Selection (DFS) and Dynamic Transmit Power (DTP)

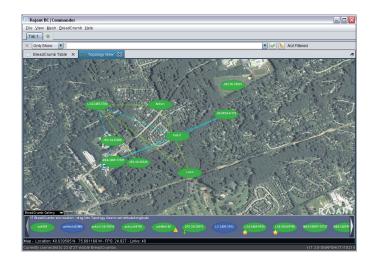
View Your Complete Network Instantly via BClConnector

BCIConnector is our next-generation network management service that constantly discovers and maintains connections to the mesh network. At any time, BCICommander[®] can connect to BCIConnector for instant information about the mesh and its BreadCrumbs. This greatly reduces administrative overhead, provides much faster BCICommander startup, and simplifies remote network monitoring by authorized administrators.



	Mesh BreadCrum	ib <u>H</u> elp							
Tab 1	•								
× Only S	Show 💌							I 🖌 🚺	Not Filtered
Bread	ICrumb Table 🗙	2 Topology	view ×					🗈 Details 🗙 😕 i	Peers 🗙 👗 Clients 🗙
Flags	Name or Serial	Session IP /	ddress Per	ers Groups	Temperatu	Uptime		General Properties	
)	fastJr	10.50.12.1		7		1 day, 6:05:39	4	Serial Number	JR2-24-25010
)	JR2-24-25008	10.97.176.1		3	42.0 °C	4 days, 0:54:54		Network Name	Not Rajant Mesh Network
>								Network ID	0000-7614-fadc
2	JR2-50-25029	10.97.197.1		1	42.0 °C	4 days, 0:54:54	Ы	State	Connected
	JR2-50-25031	10.97.199.1		1	45.0 °C	2 days, 22:25:08		Last Update	5 seconds
	JRHP24-4-173	10.0.173.1		6		3 days, 23:20:04		Session IP Address	10.97.178.1
	Loco	10.97.196.1		3	45.0 °C	4 days, 0:54:51		Platform	JR2
9	LX 2450-2162	10.8.114.1						Version	11.4.0-trunk
9	LX4-2495-5780	10.22.148.1		8	44.5 °C	3 days, 23:56:02		Build	18097
9	LX4-2495-8160	10.31.224.1		9	48.0 °C	6 days, 20:16:34		DHCP Server	Disabled
	LX4-2954-8186	10.31.250.1		1	61.0 °C	3 days, 23:56:46		GPS Mode	Manual
9	ME4-2409-12531	10.48.243.1		7	43.3 °C	3:29:25		v10 Compatibility Mode	Disabled
9	ME4-2450R-25	10.100.127.	1	1	34.6 °C	0:02:14		Radios	
2	ME4-2450R-25	10.100.129.		1	, 34.1 °C	0:01:59	*	Name	wian0
_						<u>7</u> P		MAC Address	d4:ca:6d:62:ad:15
🛕 Alerts	🔀 🛍 Tasks	×						ESSID (AP0)	Al-Hotspot
Serial Nur	nber Bre	adCrumb	Alert Type	Code	Message			Mode	Mesh+AP
VE3-24-4) ack	d/1e3-40	WARNING	61	Battery gas o	aauge i2c device ci	oute	Frequency	2437 MHz
							-11	Antenna Port(s)	Slot 1
								Channel	6
•						,	F.	Bandwidth	40 MHz ht40-
1 of 1 Alert(s) Shown Show All No								Noise Floor	-76 dBm

SerialNumber	Name	Face	Channel	Band	Bandwidth	TX Power	Freq	900 MHz Overlap
LX4-2495-8133		wlan0	5	900 MHz	20	5	[901923] A	and the second s
ME4-2409-12550		wian0	5	900 MHz	20	11	19019231	
4E4-2409-12533		wlan0	5	900 MHz	20	11	(901923)	
4E4-2409-12531		wlan0	5	900 MHz	20	11	[901923]	
x4-2954-8184		wlan0	5	900 MHz	20	18	[901923]	900 910 920 930 940 95
x4-2954-8186	ndragon-k4	wlan0	5	900 MHz	20	18	(901923)	2 Channels in conflict
E2-2495-1704		wlan0	5	900 MHz	ht40+	18	(901945)	2.4 GHz Overlap
E2-2495-1781		wlan0	5	900 MHz	ht40+	18	[901945]	2.4 GHZ OVERIAB
E2-2495-1780		wlan0	5	900 MHz	ht40+	18	[901945]	
X-2450-2172	Aardvark	wlan1	10	2.4 GHz	20	12	1244624681	
x4-2954-8186	ndragon-lx4	wian1	11	2.4 GHz	20	18	[24512473]	
12-24-25015	IR2-TxPowerTest2.4	wlan0	11	2.4 GHz	20	16	[24512473]	
E2-2495-1781		wlan1	11	2.4 GHz	ht20	23	[24512473]	2,400 2,425 2,450 2,475 2,500
E2-2495-1704		wlan1	11	2.4 GHz	ht20	23	1245124731	2 Channels in conflict
E4-2450R-25034	Tony	wian1	11	2.4 GHz	20	16	1245124731	5 GHz Overlap
E2-2495-1780		wian1	11	2.4 GHz	ht20	23	[24512473]	والار والمقدر والار والار والار
x 2450-41	ackAvila32MB	wlan1	11	2.4 GHz	20	12	[24512473]	
X 2450-2177	Abaci	wlan1	11	2.4 GHz	20	16	245124731	
32-24-25663		wian0	11	2.4 GHz	ht20	17	1245124731	
12-24-26165		wlan0	11	2.4 GHz	ht20	17	[24512473]	
E4-2409-12531		wian1	11	2.4 GHz	20	9	24512473]	5.750 5.775 5.800 5.825 6 Channels in conflict
x4-2954-8184		wlan1	11	2.4 GHz	20		[24512473]	* Using SMHz guard-band for 20MHz wide channel
	subjection in the second se		1.40	P. (71)-	Lann			 Using smine guaro-band for 20MHz wide channel



Optimize Your Rajant Kinetic Mesh® Network with BClCommander

As your private wireless mesh network evolves and expands to support new applications and changing communication requirements, achieving optimal reliability, performance, and security requires a first-rate network management solution. BClCommander is a best-in-class network management application with rich functionality that gives you the real-time information and time-saving tools you need to keep your communications flowing continuously and efficiently. And, we regularly update BClCommander as new technologies become available.

For optimal Kinetic Mesh network performance, you can pair BClCommander with BClEnterprise, our alwayson mesh network monitoring and alerting system. BClEnterprise provides strategic data on historical mesh network performance with automatic system alerts to identify and diagnose potential network anomalies. Together BClCommander and BClEnterprise offer a comprehensive network monitoring and management solution for your Kinetic Mesh network.

With these sophisticated yet easy-to-use network management tools, you have the right information at the right time and the right tools to optimize your Rajant wireless mesh network. BClCommander and BClEnterprise are available from Rajant Corporation and its authorized channel partners.

Tel: 484.595.0233 | www.rajant.com

Updated 1/31/2018

BreadCrumb, InstaMesh, Kinetic Mesh, and BCICommander and their stylized logos are registered trademarks of Rajant Corporation. All other trademarks are the property of their respective owners. © Copyright 2018 Rajant Corporation. All right reserved.

