



FEATURE HIGHLIGHTS

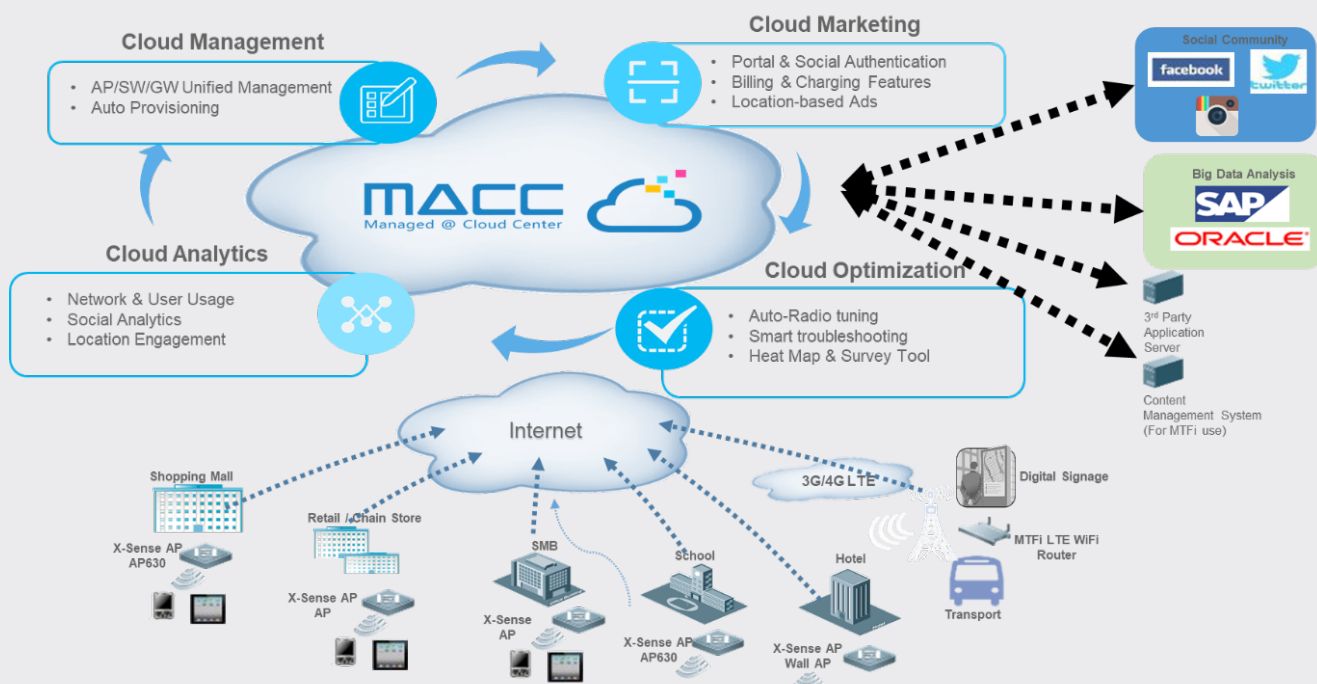
- All-in-one Platform**
 - Integrating features of device management, AAA, portal servers and marketing Wi-Fi into one platform
- Location-based Analysis**
 - Support heat mapping and footfall measurement
 - Support presence analytics
 - Support API for 3rd party integration
- Flexible Accounting & Billing Policy**
 - Support multiple authentication for various free Wi-Fi or paid Wi-Fi scenarios
 - Support data quota, time-limit, rate-limit charging policy
 - Support user/password, SMS, voucher/QR-code login
- Social Marketing**
 - Customized Ads portal: Tenants can edit their advertisements easily with Drag-n-Drop Ads Designer Tool in the RG-MACC-SAM
 - Support a wide range of social media authentication (i.e. Facebook, Instagram, Twitter, etc.) with social analytics engine
 - Support questionnaire/survey form for feedback collection

Ruijie RG-MACC

Cloud Solution Framework Overview Datasheet

The Ruijie RG-MACC (Managed @ Cloud Center)

is a revolutionary cloud management platform which supports unified management and configuration of APs, switches and gateway devices¹, as well as value-added marketing features, location-based services (LBS)², site survey, etc. The RG-MACC is designed for education, retail chain stores, shopping malls, hotels, transportation, small and medium-sized enterprises, network operators and settings alike. The RG-MACC is consisted of various feature modules, such as management, marketing and AAA (authentication, authorization and accounting), LBS, site survey planner, diagnostic tools, etc. The platform significantly reduces the total cost of investment while ensuring high usability of the RG-MACC.



NOTE:

^{1,2} Future release support

Figure 1: RG-MACC Cloud Wi-Fi Solution Diagram

RG-MACC SOLUTION COMPONENTS

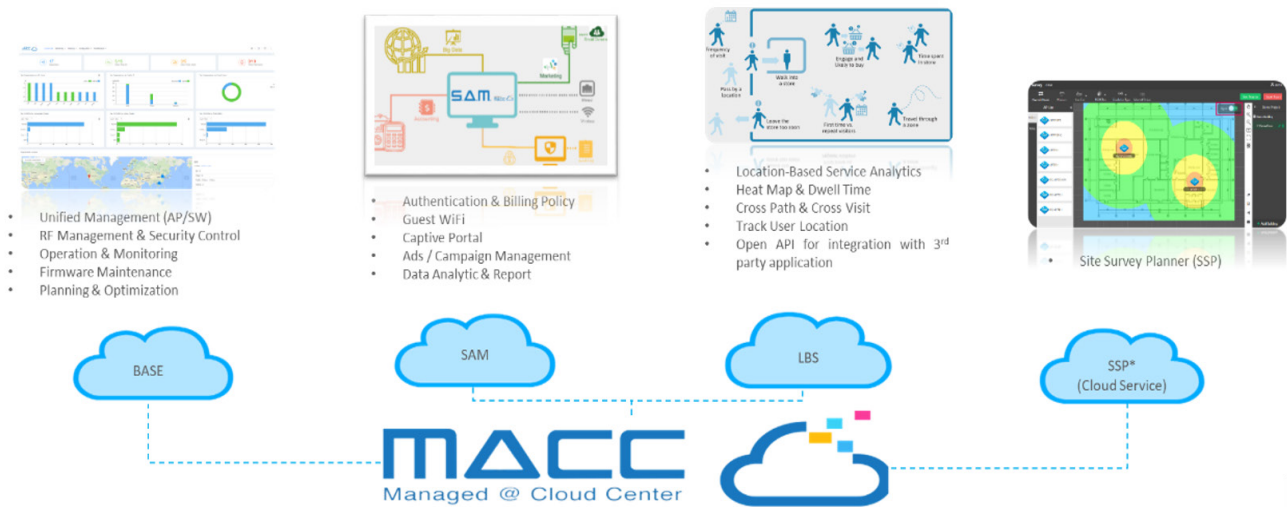


Figure 2: RG-MACC Cloud Solution Components

MANAGEMENT MODULE

The **RG-MACC-BASE** supports device planning, configuration, control, operation and maintenance on cloud, which provides an easy solution to centrally manage all the Wi-Fi devices. Traditionally, the AC implements close coupling for AP management, which is more suitable for large-scale AP control within the LAN. On the other hand, the RG-MACC-BASE platform deploys loose

coupling to completely separate management and data for a better wireless environment. Teaming up with Ruijie AP Series, the RG-MACC-BASE does not only achieve AP management with ease, but also acts like a physical AC. The cloud platform supports wireless control features such as auto power and channel adjustment, RF management and optimization, L2/L3 roaming and beyond.



Figure 3: RG-MACC-BASE Main Monitoring Page

MARKETING and AAA MODULE

The RG-MACC-SAM (Security x Accounting x Marketing) is a single platform that provides AAA and captive portal service. It enables the clients to offer their guests public Wi-Fi and network access. Using a customizable splash portal, powerful proximity marketing, advertising, and analytic applications, they can provide an engaging Wi-

Fi and network experience. RG-MACC-SAM is the next-generation AAA system with billing and identity management in mind. Highly capable to be deployed in a broadband service network wired for high-speed access such as hotels, airports, apartment buildings, campuses, etc.

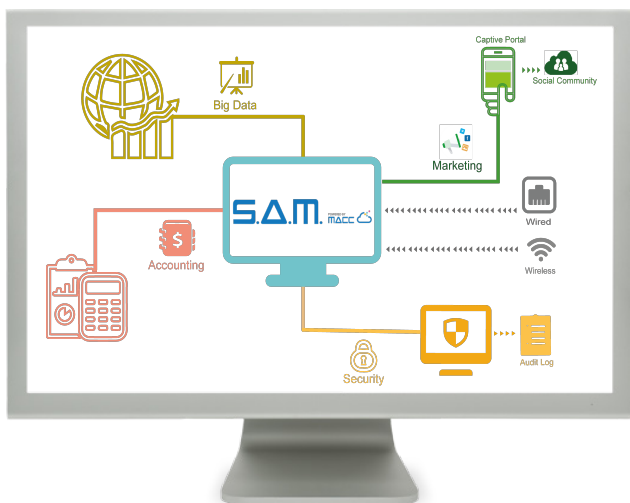


Figure 4: RG-MACC-SAM



Figure 5: RG-MACC-SAM's Feature at a Glance

Location-based Service Module

The RG-MACC-LBS features user location tracking and user analytics to help the clients learn about the Wi-Fi environment of their venues and their users for making decisions on how to allocate project resources. The location data enabled by the positioning technology presents the paths which the users take, the entry and exit data, the dwell time and the crowd density via the heat map. The RG-MACC-LBS can be deployed in a variety of scenarios for clients' business or projects,

such as shopping mall Wi-Fi, campus Wi-Fi and Smart City Project.

For application in shopping malls, the RG-MACC-LBS enhances the operational efficiency and boosts the customer engagement supported by the behavioural data of the customers. It also helps the clients to refine their marketing campaigns and drive up the marketing effectiveness enabled by the analytics of user behaviour and accurate smart device location.

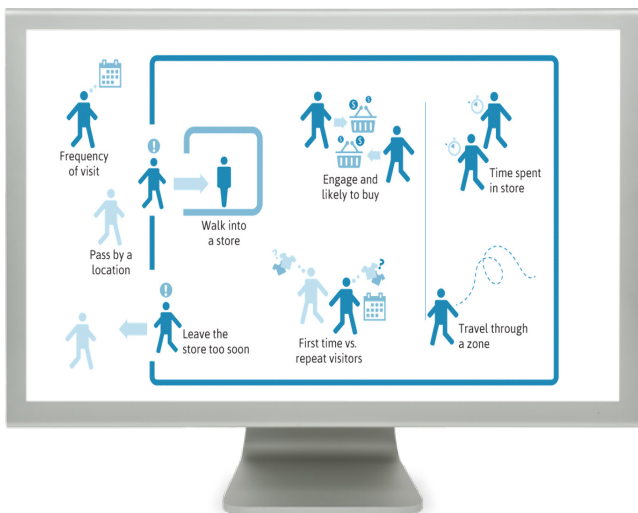


Figure 6: Application of RG-MACC-LBS in Shopping Malls

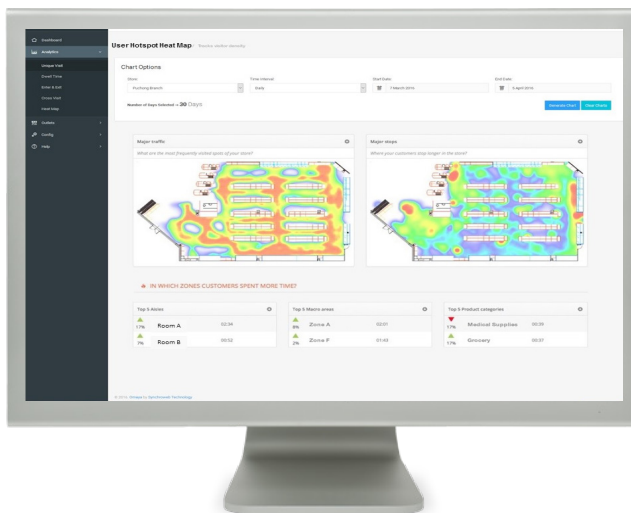


Figure 7: User Heat Map Analysis

For application in large school campuses, the RG-MACC-LBS can deliver detailed analysis of mobile user onsite behaviours to optimize planning and operations, which can provide a win-win solution for both the administration and the students, offering a variety of benefits such as providing improved campus operational and management, delivering enhanced learning and wireless experience, creating promotional and marketing opportunities, etc.

For application in the Smart City Project, the RG-MACC-LBS represents huge opportunities for both business growth and also for the delivery of better services and experiences for the citizens. By using the RG-MACC-LBS to gather information such as pedestrian traffic, available parking spaces, road traffic, etc., city services can be delivered more efficiently to minimize government costs and improve service delivery.

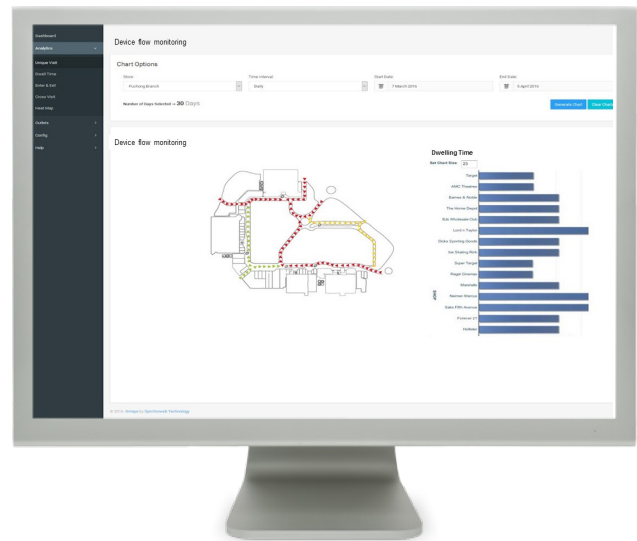


Figure 8: Device Flow Monitoring

SITE SURVEY MODULE

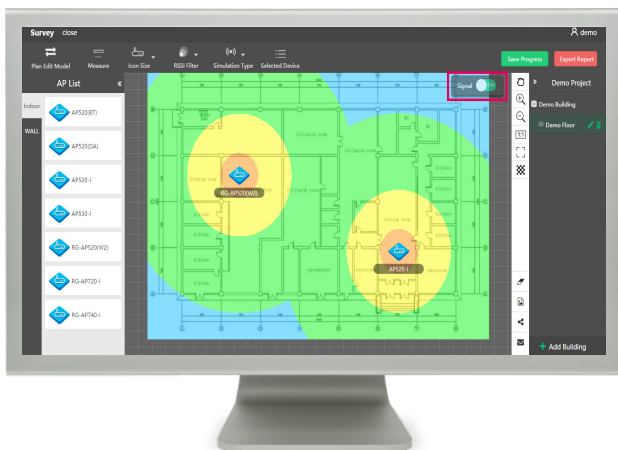


Figure 9: AP Deployment Scenario Simulation

The RG-MACC-SSP (Site Survey Planner) is an easy-to-use simulation tool to generate the heat map according to the imported floor plan with predictions of signal strength, channel interference and speed. It supports adding and removing device icons and obstacles, enabling the pre-sales engineers to design the network plan with ease. The APs can be placed for the optimal wireless performance, powered by the data-driven simulation of the AP deployment scenario.

APPLICATION SCENARIOS

Education

- **Unified management:**
With RG-MACC, the least IT expert will be required as it can perform several functions including wireless controller, AAA (Authentication, Authorization and Accounting), portal server (customized login page) and marketing Wi-Fi in one platform
- **Centralized management:**
RG-MACC-BASE can conduct configuration and manage all status of AP, Switches and Gateway in one cloud management platform
- **Two deployment methods:**
On premise: All servers are installed and managed in customers' environment
Cloud deployment: The multi-tenant mode enables the MSPs to host multiple tenants within one system
- **Wireless and wired network accounting policy:**
RG-MACC-SAM can control the network access policy such as granting different speed and data limit for the wifi access for various zone or SSIDs
- **Customized portal:**
RG-MACC-SAM can offer different landing pages based on different SSIDs

Retail Chain & Mall

- **Auto-provisioning:**
With plug-n-play AP, RG-MACC allows you to provision new Access Point in your existing network automatically without manual intervention
- **Supporting voucher (QR Code) login:**
Customers can obtain Internet access right when they scan the QR code placed inside the store
- **Support Ads portal:**
Tenants can edit their advertisements easily with Drag-n-Drop Ads Designer Tool in the RG-MACC-SAM
- **New advertisement method:**
Preventing the interference from other Access Points, Ruijie AP700 series integrated with Bluetooth iBeacon, working with 3rd party Mobile Apps (such as Wechat Shake) can be used as a new interactive marketing tool for advertisement pushing to guests

- **Location tracking analysis:**

With footfall measurement via heat map, RG-MACC-LBS can provide valuable guest engagement information to tenants in order to assist tenants allocating their advertising resource on the proper place

Hotel

- **Zero-deadzone wireless coverage:**
With Ruijie's X-sense AP, tenants can enjoy 360 degree wireless coverage without dead zones to guarantee optimal Wi-Fi signal for each direction
- **Support flexible billing features:**
With RG-MACC-SAM, tenants can charge their customers with internet access based on bandwidth, data usage and speed limit
- **Support voucher (QR Code) login:**
Customers can access to the Internet (with specified period or data volume) by scanning the QR code or input the code printed on the voucher
- **Support social authentication:**
RG-MACC-SAM can support a variety of Social Authentication methods such as Facebook, Instagram and Twitter as another mean for users to gain access to a free Wi-Fi
- **Support social analytics engine:**
The demographic data³ of customers can be collected when they access to tenants' Wi-Fi portal

Transportation/ Digital Signage

- **Mobility 4G backhaul & Wi-Fi service:**
Empowered by RG-MTFi Mobile LTE Router, which is a compact industrial-grade design LTE and WiFi router, perfect for providing stable 4G Internet & WiFi service in extreme environments. Working with RG-MACC management platform, all RG-MTFi router device configuration and realtime status can be managed centrally.
- **Media publishing platform:**
In collaboration with Ruijie RG-MTFi Mobile LTE Router, which offers a built-in hard disk⁴ for

NOTE:

³Type of data be collected subject to privacy policy of the selected social community company

⁴Model RG-MTFi-M520(ILEAA) built-in with 128G SSD

local content caching from centralized Content Management Server (CMS). Featured videos, music and popular APPs can be locally stored to eliminate 3G/4G data costs⁵. It minimizes the disruption media broadcasting even during internet connectivity outage. User can easily and quickly access such resources via the Wi-Fi network.

- **GPS fleet tracking services:**

Taking advantage of RG-MTFi Mobile LTE Router, which bundled with GPS feature, together with Ruijie

MACC integration, the vehicle can be visualized by Google Map either in real-time or historical vehicle location.

- **Marketing segmentation:**

Passenger profile can be built by dividing into different segmentations based on passenger online duration, information of get on/off places and etc.

Technical Specifications

Feature List

	RG-MACC-BASE	RG-MACC-SAM	RG-MACC-LBS
Deployment Mode:			
(i) Single-Tenant (suitable for local premises deployment)	✓	✓	
(ii) Multi-Tenant (suitable for private/ cloud deployment)	✓	✓	✓
Planning:			
(i) Location Planning (Google Map)	✓		
(ii) AP Layout Planning	✓		
(iii) Auto RF Planning	✓		
(iv) Power & Channel Optimization	✓		
(v) WLAN Site Survey Planner (RG-MACC-SSP)	✓		
Configuration:			
(i) SSID Configuration	✓		
(ii) Radio Configuration	✓		
(iii) Web Authentication Configuration	✓		
(iv) 802.1X Authentication Configuration	✓		
(v) Wireless Location Configuration	✓		
(vi) Wireless Security Configuration	✓		
(vii) Rate Limit Configuration	✓		
(viii) Blacklist/Whitelist Configuration	✓		
(ix) Bluetooth Configuration	✓		
Load Balancing:			
(i) AP Load Balancing	✓		
(ii) Band Steering	✓		
Wireless Roaming:			
(i) Layer 2 Roaming	✓		
(ii) Layer 3 Roaming	✓		
Monitoring:			
(i) Global View (Dashboard)	✓		
(ii) User Overview	✓		
(iii) AP Overview	✓		
Authentication:			
(i) Radius Server		✓	
(ii) Radius Proxy		✓	
(iii) MAC Authentication		✓	

NOTE:

⁵ 3rd Party Content Management System (CMS) is required

	RG-MACC-BASE	RG-MACC-SAM	RG-MACC-LBS
(iv) Captive Portal (Web Authentication)		✓	
(v) Email/Public Signup		✓	
(vi) Active Directory (For local premises deployment)		✓	
(vii) LDAP		✓	
(viii) Voucher (QR code)		✓	
(ix) SMS Gateway Integration (Twilio)		✓	
Social Media Login:			
(i) Integration with Facebook, Twitter, Instagram		✓	
Access Control:			
(i) Quota Limit		✓	
(ii) Speed Limit		✓	
(iii) Time Limit		✓	
(iv) Concurrency Devices Control		✓	
(v) Auto Reset Profile		✓	
(vi) Bulk Users Manager		✓	
(vii) Automatic Suspension & Purge of Expired Users		✓	
Captive Portal Engine:			
(i) Page Maker		✓	
(ii) Media Library		✓	
(iii) Login Journey Editor		✓	
(iv) T&C Editor		✓	
(v) Sign Up Page Data Field		✓	
(vi) Error Notification		✓	
(vii) Auto-adjustable for Various Screen Resolution		✓	
Marketing Campaign:			
(i) Support Ads Portal & Campaign Management		✓	
(ii) Coupon Engine		✓	
(iii) Survey Engine		✓	
Policy:			
(i) Zone Restriction (by IP, VLAN, SSID, NAS ID combination)		✓	
(ii) Mac Security		✓	
(iii) Mac Auto Register		✓	
Finance:			
(i) Voucher Report		✓	
(ii) Invoices		✓	
Analytics Reports:			
(i) Account Summary		✓	
(ii) Login Report		✓	
(iii) Bandwidth Report		✓	
Location-based Service:			
(i) Presence (1 AP) or Location-tracking (min 3 AP) Mode			✓
(ii) Analytics: Unique Visit			✓
(iii) Analytics: Entry & Exit			✓
(iv) Analytics: Dwell Time			✓
(v) Analytics: Venue Map			✓
(vi) Analytics: Loyalty & Distribution			✓
(vii) 3 rd Party API Integration			✓
Maintenance:			
(i) Firmware Upgrade	✓		
(ii) Server Manual Upgrade	✓		
(iii) Server Online Upgrade	✓		
(iv) Reports	✓		
(v) Logs	✓		

	RG-MACC-BASE	RG-MACC-SAM	RG-MACC-LBS
(vi) Disk Monitoring & Automated Cleanup	✓		
(vii) Database Backup	✓		
Alarm:			
(i) Alarm Customization	✓		
(ii) Alarm Pushes (Email)	✓		
System Management:			
(i) Tenant Management	✓		
(ii) Role-based Privilege Management (Account Classification)	✓		
(iii) License Management	✓		
(iv) Account Language Support	✓		
Support			
(i) Online Document Support	✓		
(ii) Online 24-hour Support	✓		

Supported Models

Supporting Ruijie Hardware Models

Product Type	Product Series	Hardware Model
AP (RGOS AP)	AP120 Series	AP120-W, AP120-W(V2)
	AP130 Series	AP130(W2), AP130(L), AP130-W
	AP500 Series	AP520-I(G2), AP520(W2), AP520(BT), AP520(DA), AP530-I V2
	AP700 Series	AP740-I, AP720-I, AP740-I(C)
	AP630 Series	AP630(IDA), AP630(IODA), AP630(CD)
	MTFI Series	RG-MTFI-M520(IZEAA), RG-MTFI-M520(ILEAA)
Switch ⁶	S2910XS-E/P XS Series	S2910-24GT4XS-E, S2910-48GT4XS-E, S2910-24GT2XS-P-E, S2910-24GT2XS-HP-E, S2910-48GT2XS-HP-E S2910-10GT2SFP-P-E

System Requirements

RG-MACC-BASE System Requirements

Scale	Recommended System Specifications				
Number of APs	CPU	RAM	HDD	Internet Bandwidth (minimum)	Number of Servers
< 1,000	4	8 GB	256 GB	1MB	1
1,000 to 4,000	8	16 GB	512 GB	2MB	1
4,000 to 10,000	8	16 GB	512 GB	4MB	2
Above 10,000	If cluster solution is required, please contact Ruijie local sales representative for details				

RG-MACC-SAM System Requirements

Scale	Recommended System Specifications				
Number of APs	CPU	RAM	HDD	Internet Bandwidth (minimum)	Concurrent Clients
< 500	1	16 GB	500 GB	1MB	15,000
500 to 1,000	1	32 GB	800 GB	2MB	30,000
1,000 to 2,000	1	32 GB	1 TB	4MB	60,000
2,000 to 3,000	2	32 GB	1.5 TB	6MB	90,000
3,000 to 5,000	4	64 GB	3 TB	10MB	150,000
Above 5,000	If cluster solution is required, please contact Ruijie local sales representative for details				

NOTE:

⁶ Future release support

RG-MACC-LBS System Requirements

Scale	Recommended System Specifications				
Number of APs	CPU	RAM	HDD	NIC	Concurrent Clients
< 500	1	16 GB	500 GB	1GE	15,000
500 to 1,000	1	32 GB	800 GB	1GE	30,000
1,000 to 2,000	1	32 GB	1 TB	1GE	60,000
2,000 to 3,000	2	32 GB	1.5 TB	2 x 1GE	90,000
3,000 to 5,000	4	64 GB	3 TB	2 x 1GE	150,000
Above 5,000	If cluster solution is required, please contact Ruijie local sales representative for details				

Ordering Information

Model	Description
RG-MACC-BASE	Ruijie MACC Solution Framework Base Module - providing cloud-based device planning, monitoring, troubleshooting and reporting, multi-tenant edition for Managed Service Provider (MSP) (including: 3-year software support service with software upgrade, patches and online technical support service)
RG-MACC-BASE-LIC-25	RG-MACC-BASE Licenses for 25 registered devices
RG-MACC-BASE-LIC-50	RG-MACC-BASE Licenses for 50 registered devices
RG-MACC-BASE-LIC-100	RG-MACC-BASE Licenses for 100 registered devices
RG-MACC-BASE-LIC-500	RG-MACC-BASE Licenses for 500 registered devices
RG-MACC-BASE-LIC-1K	RG-MACC-BASE Licenses for 1K registered devices
RG-MACC-BASE-LIC-5K	RG-MACC-BASE Licenses for 5K registered devices
RG-MACC-BASE-LIC-10K	RG-MACC-BASE Licenses for 10K registered devices
RG-MACC-SAM-LBS-BASE	Ruijie MACC Security x Accounting x Marketing (S.A.M.) and Location-Based Service (LBS) Base Module - providing all-in-one AAA/portal, billing, campaign and Ads management, analytic reporting, social login and LBS analytic or API. Multi-tenant edition for Managed Service Provider (MSP) (including 3-year software support service with software upgrade, patches and online technical support service; Device license sold separately)
RG-MACC-SAM-LIC-25	Ruijie MACC Security x Accounting x Marketing (S.A.M.) License for multi-tenant edition. License for 25 registered devices
RG-MACC-SAM-LIC-100	Ruijie MACC Security x Accounting x Marketing (S.A.M.) License for multi-tenant edition. License for 100 registered devices
RG-MACC-SAM-LIC-500	Ruijie MACC Security x Accounting x Marketing (S.A.M.) License for multi-tenant edition. License for 500 registered devices
RG-MACC-SAM-LIC-1K	Ruijie MACC Security x Accounting x Marketing (S.A.M.) License for multi-tenant edition. License for 1000 registered devices
RG-MACC-SAM-LIC-5K	Ruijie MACC Security x Accounting x Marketing (S.A.M.) License for multi-tenant edition. License for 5000 registered devices
RG-MACC-LBS-LIC-25	Ruijie MACC Location-Based Service (LBS) License for multi-tenant edition. License for 25 registered devices
RG-MACC-LBS-LIC-100	Ruijie MACC Location-Based Service (LBS) License for multi-tenant edition. License for 100 registered devices

Model	Description
RG-MACC-LBS-LIC-500	Ruijie MACC Location-Based Service (LBS) License for multi-tenant edition. License for 500 registered devices
RG-MACC-LBS-LIC-1K	Ruijie MACC Location-Based Service (LBS) License for multi-tenant edition. License for 1000 registered devices
RG-MACC-LBS-LIC-5K	Ruijie MACC Location-Based Service (LBS) License for multi-tenant edition. License for 5000 registered devices
RG-MACC-SSS-Service	RG-MACC Annual Software Support Service (Including software upgrade, patches and online technical support service)
RG-MACC-INT-Service	RG-MACC 3 rd party integration & development service
RG-MACC-Cluster-Service-10K	RG-MACC Cluster Implementation Service, applicable for cluster deployment of less than 10K registered devices
RG-MACC-Cluster-Service-50K	RG-MACC Cluster Implementation Service, applicable for cluster deployment of 10K-50K registered devices
RG-MACC-Cluster-Service-100K	RG-MACC Cluster Implementation Service, applicable for cluster deployment of 50K-100K registered devices
RG-MACC-Cluster-Service-100K+	RG-MACC Cluster Implementation Service, applicable for cluster deployment of more than 100K registered devices



Innovation · Simplicity · Experience

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