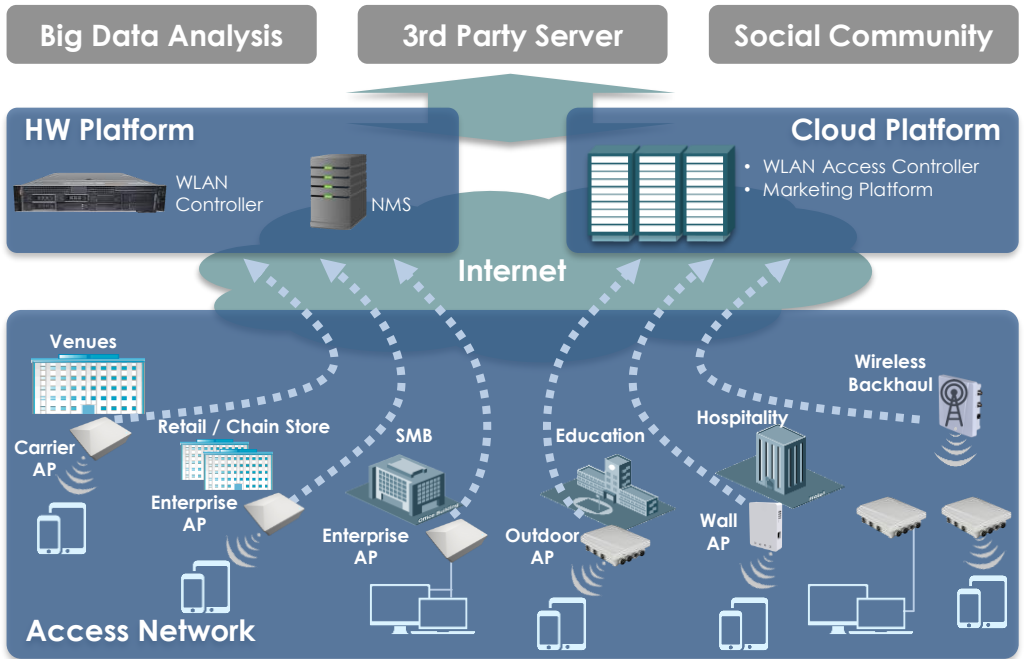# MSG2000-S

WIRELESS ACCESS CONTROLLER

Features

o **HIGH CAPACITY AND PERFORMANCE**

o **GREAT SCALABILITY**

o **ADVANCED WIRELESS RADIO MANAGEMENT**

o **SEAMLESS ROAMING**

o **HIGH RELIABILITY AND AVAILABILITY**

o **ADVANCED SECURITY**

o **CENTRALIZED AND LOCAL FORWARDING**

Carrier-grade Wi-Fi Wireless Access Controller

Description

MSG series products are carrier-grade Wireless Access Controllers that combine routing, switching, WLAN Gateway and Access Controller functionality into a unified high-performance system. The products provide centralized control and configuration of Access Points, load balancing, roaming, RF control and many other functions. This approach with all-in-one integrated system helps to optimize TCO related to network deployment and operation.

The MSG2000-S is a carrier grade Wireless Access Controller that offers extremely high capacity and performance, supporting up to 10,000 access points (APs) and 100,000 clients on a single, easy-to-use platform.

The Controller offers impressive feature set that helps to simplify deployment and operation of a wireless network, and to optimize capital expenditures. The product supports RF Management, Load Balancing, Roaming, various authentication mechanisms, built-in portal server for web authentication, and others. To further enhance system flexibility, the product supports both central and local forwarding, as well as flexible data forwarding, when an AP can determine whether to forward all data via an AC, or to send it directly to a wired network based on Service Set ID (SSID) and user VLAN.

With its advanced software features and HW design, the MSG2000-S offers high scalability, flexibility and reliability required for carrier-class applications. The innovative virtualization and automation techniques implemented on the MSG2000-S allow operators to create Virtualized ACs that include up to 2 servers for load balancing, protection and simple system management.

For additional information please visit **www.utstar.com**.

A global telecom infrastructure provider of innovative carrier-class broadband transport and access solutions.

MSG2000-S

WIRELESS ACCESS CONTROLLER

Product Highlights

LARGE CAPACITY
The MSG2000-S supports up to 10,000 Access Points and 100,000 clients.

CENTRAL & LOCAL FORWARDING
Both central and local forwarding are supported, as well as flexible data forwarding: an AP can determine based on Service Set ID (SSID) and user VLAN whether to forward all data via an AC, or to send it directly to a wired network.

INTELLIGENT RF MANAGEMENT
The controller dynamically adjusts traffic load, power, RF coverage, and channel allocation for maximized signal coverage and capacity. It also enables APs to scan spectrum so both rogue APs and networks can be identified.

INTELLIGENT LOAD BALANCING
The AC distributes users among different APs based on number of users and data traffic. It also supports frequency-based load balancing that prioritizes connection to 5GHz band as first priority for users with dual-band devices.

FAIR SCHEDULING
The system ensures equal access time for smart devices running 802.11g, 802.11n, 802.11ac or other standards. It helps to overcome network performance degradation due to use of old wireless adapters or long distance between the end devices and AP.

SEAMLESS ROAMING
Real-time synchronization of online information and roaming records of all users among multiple Wireless Controllers enables borderless and secure roaming experience with IP address and authentication status unchanged.

COMPREHENSIVE SECURITY
Advanced encryption technologies, various authentication modes with authentication mode and encryption mechanism set per SSID, encrypted communication between the controller and APs via CAPWAP, RF Security based on RF probe scanning to detect unauthorized access points or other RF interference sources, rogue AP detection, a wide range of built-in security mechanisms against viruses and network attacks, etc.

HIGH AVAILABILITY
Redundant design with excellent protection: 1+1 DC/AC, flexible servers protection based on wireless controller virtualization.

Technical Specifications

PERFORMANCE

	Per server	Virtual WLC (stacking)
Default number of manageable APs	128	640
Max number of manageable APs	10,000 (with license upgrade)	20,000 (with license upgrade)
Max number of configurable APs	16K	80K
Maximum number of clients	100K	200K
802.11 performance	100Gbps	200Gbps
VLAN	4094	4094
MAC address table	128K	256K
Local authentication	10K wireless clients	10K wireless clients
ARP table	256K	256K
Inter-AC roaming switch time	≤50ms	≤50ms
RAM	DDR4	

WLAN

LAN Protocols	ARP, VLAN, 802.1p, 802.1q, 802.1d, 802.1w, 802.1s
802.11 LAN Protocols	802.11, 802.11b, 802.11a, 802.11g, 802.11d, 802.11h, 802.11w, 802.11k, 802.11r, 802.11i, 802.11e, 802.11n , 802.11ac
CAPWAP	Layer 2/Layer 3 network topology between an AP and AC
	Enable an AP to automatically discover an accessible AC
	Enable an AP to automatically upgrade software version from an AC
	Enable an AP to automatically download configurations from an AC
	Network Address Translation (NAT) traversal

WLAN (cont'd)

Roaming	Intra-AC roaming, Inter-AC roaming
Forwarding	Local forwarding, Centralized forwarding, AP-based bandwidth control, User isolation under the same SSID
Wireless QoS	User/SSID-based rate limit (granularity: 8Kbit/s), WMM (802.11e), Wireless priority to wired priority projection, Wireless user priority to CAPWAP tunnel priority projection
User Isolation	AC-based user isolation / AP-based user isolation / WLAN-based user isolation
Reliability	Fast switching between 2 ACs, Multiple ACs redundancy (1:1 and N:1)
STA Management	User-based bandwidth limit, User-based access control, Port mirroring
STA RSSI Threshold	0 to 100
STA Idle Timeout	90 to 86,400 seconds
STA Average Data Rate Threshold	8 to 819,200 with the accuracy of 8Kbps
Adjusting Transmit Power of Beacon and Probe Response	Yes
Offline Syslog	Yes
RF Management	Setting country codes, Manually setting transmit power, Automatically setting transmit power, Manually setting working channel, Automatically setting working channel, Automatically adjusting transmission rate, Support blackhole, compensation AP load balancing based on traffic and user number, Support RF interference detection and avoidance

* Denotes features available in a future release.

MSG2000-S

WIRELESS ACCESS CONTROLLER

Technical Specifications

SECURITY

IPv4/v6 Security	Web authentication , 802.1x authentication (EAP-PEAP, EAP-SIM, EAP-MD5, EAP-TLS, EAP-TTLS, PEAP-MSCHAPv2, EAP-FAST, EAP-AKA), MAC address authentication, WAPI authentication
802.11 Security and Encryption	Multiple SSIDs, SSID hiding, 802.11i-compliant PSK authentication, WPA and WPA2, WEP (WEP/WEP128), WAPI, TKIP, CCMP, Protection against ARP spoofing, Support IP/MAC binding via DHCP SNP, Support IP/MAC/WLAN binding via RADIUS server
AAA	RADIUS client
	Multi-domain deployment for authentication server
	Authentication server backup
	ESS-based authentication server selection
	Binding of SSID and user account
SMP	Yes
CPP	Yes
NFPP	Yes
WIDS/WIPS	Whitelist, Static/dynamic blacklist, Monitor and attack rogue wireless devices, Wireless attack protection

LAN

802.1Q VLAN	Yes
ACL	Standard IP ACL

L3

IPv4 Protocols	Ping, Traceroute, DHCP Client, DHCP Relay, DHCP Snooping, DNS Client, NTP, Telnet, TFTP Client
IPv6 Protocols	Dual stack IPv4/v6, Manual tunnel, ISATAP, 6to4 tunnel, IPv4 over IPv6 tunnel,ICMPv6, ACLv6, TCP/UDP for IPv6, SOCKET for IPv6, SNMP v6 Ping/Traceroute v6, RADIUS, Telnet/SSH v6, FTP/TFTP v6, NTP v6, IPv6 MIB support for SNMP, IPv6 QoS, Static routing
IPv4 Routing	Static routing
IPv6 Routing	Static routing

SERVICE INTERFACES

Interface	Per server	Per Stacked WLC
10GBASE-X SFP+	6	12

MANAGEMENT INTERFACES

Management ports	2 x 10/100/1000M MGMT

POWER

Power supply	Redundant dual DC/AC module
Power consumption	Max 1600W

MANGEMENT

Network Management	SNMP v1/v2c/v3, Web management, Syslog
Network Management Platform	Netman 5000 OMC-W
User Access Management	Login via Telnet
	Login via SSH
	Upload to FTP

DIMENSIONS AND WEIGHT

Dimensions, WxDxH	482.6 x 715.5 x 88.9mm
Weight	Max 40kg
Installation	19-inch rack, 2RU

ENVIRONMENTAL

Operation temperature	0℃ to 45℃
Storage temperature	-40℃ to 70℃
Operation humidity	10% to 90%RH (non-condensing)
Storage humidity	5% to 95%RH (non-condensing)
Operating Altitude	-500…5000m

* Denotes features available in a future release.

Please note the information contained herein is for informational purposes only. Technical claims listed depend on a series of technical assumptions. Your experience with these products may differ if you operate the products in an environment, which is different from the technical assumptions. UTStarcom reserves the right to modify these specifications without prior notice. UTStarcom makes no warranties, express or implied, on the information contained in this document.