



# Cisco AssureWave Wireless LAN Controller

## Release 7.4.121.0 Test Results

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### Version History

Version number	Date	Notes
0.1	Feb 7 <sup>th</sup> 2013	Draft
0.2	Feb 11 <sup>th</sup> 2013	Updated for Healthcare
0.3	Feb 12 <sup>th</sup> 2013	Added post release caveats

### Executive Summary

AssureWave is a Cisco initiative that provides Wireless LAN service providers with their Cisco software version of choice.

The AssureWave program collects topology, application, and client information from various sources such as Sales Engineers, TAC and directly from customers to build test networks that simulate particular vertical environments. These test networks run additional scenarios based on this vertical information to better cover various interoperability matrices. The vertical test beds are built upon existing horizontal technologies such as Mobility, Voice, and Routing/Switching. In addition, existing Best Practices and Deployment Guides from the different technologies are referenced and deployed in the networks. This release tested the HealthCare, Retail, Enterprise and Higher Education vertical market scenarios.

The AssureWave program also proactively enlists additional testing from 3rd party partners in addition to any existing Cisco partnerships. This comprehensive testing of client and application interoperability results in a smoother introduction of a complete end-to-end wireless ecosystem.

This document summarizes what was tested for each market segment; in which specific combinations of devices and features were tested; a test summary and recommendation; and relevant open caveats.



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## HealthCare Vertical Market

### What Was Tested

- Cisco Wireless LAN Controller (5508, WISM2 and 2504) N-1 and N-2 upgrades (N-2, N-1 being previous major releases and N being current version).
- Cisco NCS N-1 Upgrade (N-1 being the previous major release and N being current version).
- Cisco Mobility Services Engine (MSE) Appliance N-1 Upgrade (N-1 being the previous major release and N being current version).
- Simultaneous client encryption methods—Open, WEP, WPA and WPA2.
- Simultaneous client EAP authentication modes—LEAP, PEAP, EAP-FAST, EAP-TLS.
- Layer 2 (inter/intra controller) and Layer 3 roaming scenarios (with voice and data clients).
- High Availability—Controller/AP, access layer failover testing.
- Voice clients including the Cisco 7921/25/26/9971, Spectralink 8030/8450, Ascom i62 and Vocera B2000/3000 badges with one-to-one, one-to-many (as applicable), wireless-to-landline, and PTT with Cisco IPICS.
- Guest Access (wired and wireless) with Open authentication methods.
- Location tracking with data/voice clients and active RFID tags.
- Interoperability between various data, voice, and RFID devices on both the 2.4 and 5Ghz bands as applicable.
- Radio Resource Management (RRM) functionality
- IPv4 Media Streaming and Multicast with Roaming
- Vlan Pooling.
- Wireless Medical Patient Monitoring Systems , IV Pumps , etc. with WEP , WPA2-PSK , WPA-PSK , 802.1x (WPA2 Enterprise) security with a/b/g radios.
- SNMP stress
- Controller HA Funnctionality with AP SSO .
- Collaboration Application Testing with Apple and Windows Devices for Cisco Jabber and Jabber IM .
- MS Lync 2013 Application Testing with Microsoft Windows Clients including Chat , Share , Video Call , Audio Call , Conferencing, Persistant Chat .



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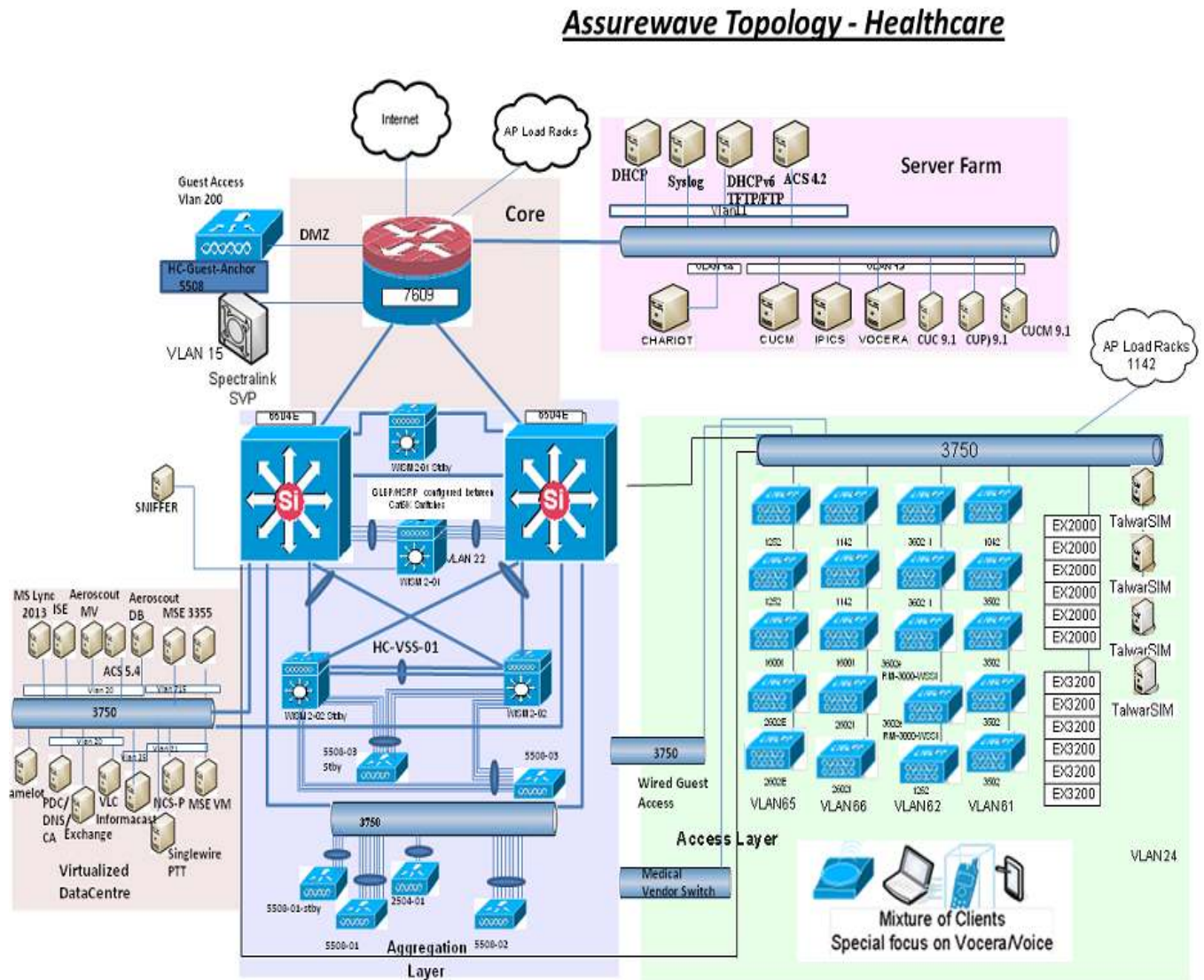
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## Healthcare Test Topology

Figure 1 shows the test topology for the Healthcare vertical market.



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## Devices and Software Tested

The following devices and software were tested as part of the AssureWave healthcare vertical market.

**Table 1 Infrastructure Devices Tested for Healthcare**

Infrastructure Device Information	
Device	Version
WS-C6504-E w/ VS-S2T-10G w/ WS-X6848-GE-TX w/ WS-X6908-10G  WS-C6504-E w/ VS-S2T-10G w/ WS-X6848-GE-TX w/ WS-X6908-10G  WS-C6509-E w/ VS-S2T-10G w/ WS-X6848-GE-TX w/ WS-X6908-10G w/ WS-SVC-WISM2-K9  VSS ===== WS-C6506-E w/ VS-S2T-10G w/ WS-X6848-GE-TX w/ WS-X6908-10G w/ WS-SVC-WISM2-K9  WS-C6506-E w/ VS-S2T-10G w/ WS-X6848-GE-TX w/ WS-X6908-10G w/ WS-SVC-WISM2-K9	15.1(1)SY1
WS-C3750G-24PS-S WS-C3750G-48PS-S WS-C3750X-48PS-S	12.2(44)SE 15.0(1)SE
CISCO7609 w/WS-SUP720-3B w/WS-X6548-GE-45AF w/WS-SVC-FWM-1-K9	12.2(33)SXJ2

**Table 2 Controller and Access Point Devices Tested for Healthcare**

Controller / Access Point Information	
Device	Version
AIR-CT5508-500-K9	7.4.121.0



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Controller / Access Point Information	
Device	Version
WS-SVC-WISM2-K9	7.4.121.0
AIR-CT2504-50-K9	7.4.121.0
AIR-LAP1131AG-A-K9	7.4.121.0
AIR-LAP1142N-A-K9	7.4.121.0
AIR-LAP1242AG-A-K9	7.4.121.0
AIR-LAP1252AG-A-K9	7.4.121.0
AIR-LAP1262N-A-K9	7.4.121.0
AIR-CAP3502E-A-K9	7.4.121.0
AIR-CAP3502I-A-K9	7.4.121.0
AIR-CAP2600I-A-K9	7.4.121.0
AIR-CAP1602E/I-A-K9	7.4.121.0
AIR-CAP3602E-A-K9	7.4.121.0
AIR-CAP3602I-A-K9	7.4.121.0
AIR-LAP1042N-A-K9	7.4.121.0
AIR-AP1232AG-A-K9	12.3(8)JEE (as WGB)
AIR-AP1242AG-A-K9	12.4(25d)JA2 (as WGB)
AIR-AP1131AG-A-K9	12.4(25d)JA2(as WGB)
AIR-SAP1602I-A-K9	15.2(2)JB ( as WGB)

**Table 3 Network Server Devices Tested for Healthcare**

Network Server Information	
Server Type	Version
Microsoft AD, DHCP, DNS, TFTP and FTP Services	Windows 2008 R2 Server
Microsoft CA Services	Windows 2008 R2 Server
Microsoft IAS ( NPS - Radius) Server	Windows 2008 R2 Server
Microsoft Lync 2013	Windows 2008 R2 Server
Cisco ACS Radius Server	4.2(0) Build 124
Microsoft DHCPv6 Server	Windows 2008 Server (Standard)
Cisco ACS Radius Server	5.4.0.46.0a
Microsoft Exchange Server 2010	Windows 2008 R2 Server
Cisco Identity Services Engine (ISE)	1.1.3.124 , 1.2.0.899(Patch 3 )
Cisco Unified Call Manager (CUCM)	8.6(2a)



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Network Server Information	
Server Type	Version
Cisco Unified Call Manager (CUCM) (Jabber)	9.1.1.20000-5
Cisco Unified Presence (CUP) (Jabber)	9.1.1.20000-5
Cisco Unity Connection (CUC) (Jabber)	9.1.1.20000-5
Vocera Server	4.3/SP1
Vocera Client Gateway	4.3/SP1
VLC Media Player	2.0.5
NCS	1.3.1
Cisco MSE 3355 Appliance	7.4.121.0
Cisco MSE VM	7.4.121.0
Linux RH SYSLOG/NTP Server	Linux RH Enterprise AS4

**Table 4 Application Products Tested for Healthcare**

Application Information	
Application	Version
IPICS	4.6(1)
AeroScout Tag Engine	4.4.2.11
AeroScout MobileView Server	4.4.3.9
Singlewire Informacast	8.1.0
Singlewire Push To Talk	2.4.0
Citrix Presentation Server	4.5
Ekahau RTLS Engine	RTLS version 5.6.11
Ekahau Vision	1.7.14

**Table 5 Voice Client Devices Tested for Healthcare**

Voice Client Information	
Device	Version
Ascom i62 Phone	4.3.12
Cisco 7921 Phone	1.4.4.3
Cisco 7925 Phone	1.4.4.3
Cisco 7926 Phone	1.4.4.3
Cisco 9971 Phone	9.3.1.33

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Voice Client Information	
Device	Version
Spectralink 8030	119.081/131.030/132.030 (SIP)
Spectralink 8450	4.0.0.15769 (SIP)
Vocera Badge B2000/B3000	4.3/SP1 (Build 1942)

**Table 6 Laptop Client Devices Tested for Healthcare**

Laptop Client Information			
Device	OS	Chipset	Driver
Acer Aspire AO722	Win 7 Pro SP1( 32 bit)	Atheros AR5B125	9.2.0.412
Acer TravelMate 5744-6467	Win 7 Pro SP1 ( 64 bit)	Atheros AR5B125	10.0.0.221
HP Probook 4430s	Win 8 Enterprise ( 64 bit)	Atheros AR9285	10.0.0.221
Dell Latitude 5530	Win 7 Pro SP1 ( 64 bit)	DW 1540 a/g/n	5.100.82.112
Dell Latitude 5530	Win 8 Pro Enterprise ( 64 bit)	DW 1540 a/g/n	6.30.59.26
Dell Latitude 5430	Win7 Pro SP1 ( 64 bit)	Intel N 6205 AGN	15.1.1.1
HP UltraBook Folio 13-2000	Win 7 Pro SP1 ( 64 bit)	Intel N 1030 bgn	14.2.0.10
HP Probook 6560b	Win 7 Pro ( 64 bit)	Broadcom 43224 AGN	5.60.350.23
HP Elitebook 8460p	Win 7 Pro ( 64 bit)	Broadcom 43224 AGN	5.100.82.82
Lenovo X120e( AMD)	Win7 Pro SP1 ( 64 bit)	Lenovo 1x1 11b/g/n Half Mini Adapter	1003.10.1112.2010
Fujitsu Lifebook P701	Win7 Pro ( 32 bit)	Intel N 6205 AGN	15.1.1.1
Toshiba Tecra R850	Win7 Pro SP1 ( 32 bit)	Intel N 6230 AGN	14.1.1.3
Acer TravelMate 8481T	Win 7 Pro SP1 ( 64 bit)	Intel N 6205 AGN	15.1.1.1
HP 3115M	Win 7 Home Premium ( 64 bit)	Intel N 6230 AGN	14.2.0.10
Acer Aspire 3624WXM	WinXP/SP3	Atheros AR5005G	4.0.0.14001
Acer Aspire 9500	WinXP Pro (x86)	Atheros 5005G	4.0.0.14001
Apple MacBook Air	MacOS 10.6.7	AirPort Extreme	5.10.131.36.9
Apple MacBook Air ( 2013)	MacOS 10.8.4	AirPort Exteme 802.11a/b/g/n/ac Broadcom BCM43xx 1.0	6.30.223.74.35
Acer Aspire V3 -772G-9829	Windows 8 Pro ( 64 bit)	Atheros 5BWB222	10.0.0.225



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Laptop Client Information			
Device	OS	Chipset	Driver
Asus Eee PC 1016PT	Win7 Pro (x86)	Intel 6200 AGN	13.5.0.6
Asus Eee PC 900	WinXP Home (x86)	Atheros AR5007EG	5.3.0.45
Asus R1F K018E	Win7 Ent (x86)	Intel 3945ABG	13.3.0.24
Dell Latitude E5410	Win7 Pro (x86)	Intel 6200 AGN	13.3.0.24
Dell Latitude E5410	Win7 Pro (x86)	Intel 6300 AGN	14.2.0.10
Dell Latitude E5410	Win8 Pro (x64)	Intel 6300 AGN	15.6.0.19
Dell Latitude E5410	Win7 Pro (x86)	Dell DW1520 AGN	5.60.48.35
Sony Vaio SVE151D11L	Win7 Pro ( 64 bit)	Atheros AR9485WB-EG	9.2.0.489
Sony Vaio SVE151D11L	Win8 Pro ( 64 bit)	Atheros AR9485WB-EG	Microsoft 3.0.0.130
Fujitsu Lifebook LH530	Win7 Pro (x64)	Atheros AR9285 GN	8.0.0.258
Fujitsu Lifebook T4215	Win7 Pro (x86)	Intel 3945ABG	13.3.0.24
Fujitsu Lifebook T4410	Win7 Pro (x86)	Intel 5100 AGN	12.4.1.4
Fujitsu Lifebook T580	Win7 Pro (x86)	Atheros AR928X	10.0.0.75
HP EliteBook 6930p	Win7 Ent (x64)	Intel 5300 AGN	14.3.2.1
HP EliteBook 6930p	WinXP Pro (x86)	Intel 5300 AGN	13.4.0.9
HP ProBook 6455b	Win7 Pro (x86)	Broadcom 4313 BG	5.60.350.11
HP ProBook 6550b	Win7 Pro (x86)	Broadcom 43224 AGN	5.60.350.11
HP/Compaq Compaq 6530b	Win7 Ent (x64)	Intel 5100 AGN	14.3.2.1
HP/Compaq Compaq 6530b	WinXP Pro (x86)	Intel 5100 AGN	13.4.0.9
HP/Compaq Compaq 6730b	Win7 Ent (x86)	Intel 5100 AGN	13.3.0.24
HP/Compaq Compaq 6830s	Win7 Ent (x86)	Intel 5100 AGN	13.3.0.24
HP/Compaq Compaq 6910p	Win7 Ent (x64)	Intel 4965 AGN	12.4.1.4
Lenovo N100	WinXP Pro (x86)	Intel 3945 AG	13.4.0.139
Lenovo SL400 2743-89U	Win7 Ent (x86)	Intel 5100 AGN	13.3.0.24
Lenovo T61	WinXP/SP3 (x86)	Intel 3945 AG	13.3.0.137
Motion Computing MC-C5v	Win7 Pro (x86)	Intel 6200 AGN	14.2.0.10
Motion Computing MC-F5	WinXP/Tablet/SP3	Intel 3945 ABG	13.4.0.139
Motion Computing J3400	Win7 Pro (x86)	Intel 5300 AGN	13.3.0.137
Panasonic ToughBook CF-52	Win7 Pro (x86)	Intel 5100 AGN	13.4.0.9
Panasonic ToughBook CF-U1	Win7 Ent (x86)	Intel 5100 AGN	13.1.1.1


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Laptop Client Information			
Device	OS	Chipset	Driver
Sony Vaio PCG-6Q1L	Win7 Ent (x86)	Intel 3945 ABG	12.4.1.4
Sony Vaio/PCG-7133L	Win7 Ent (x64)	Intel 4965 AGN	13.3.0.137
Sony Vaio/PCG-7X1L	Win7 Ent (x86)	Intel 3945 AG	13.4.0.139
Toshiba Satellite A135-S2386	WinXP Pro (x86)	Linksys WPC600N	4.150.31.0
Toshiba Satellite A135-S4467	Win7 Ent (x86)	Intel 3945 AG	12.4.1.4
Toshiba Satellite U205-S5034	WinXP Pro (x86)	Intel 3945 AG	13.3.0.137
Toshiba Tecra A9-S9018X	WinXP Pro (x86)	Intel 4965 AGN	13.4.0.139
Toshiba Tecra M10-S3452	Win7 Ent (x64)	Intel 5100 AGN	13.4.0.9

**Table 7 Tablet/Smartphone Devices Tested for Healthcare**

Tablet/Smartphone Client Information		
Device	OS	Version
Apple iPod Touch	iOS	7.0.3
Apple iPad 2	iOS	7.0.3
Apple iPad 3	iOS	7.0.3
Apple iPhone 4S	iOS	7.0.3
Apple iPhone 5	iOS	7.0.3
Archos 43 Internet Tablet	Android	2.3.26
Samsung Galaxy Tab 7	Android	2.2.1
Google Nexus 7	Android	4.2.2 / 4.1.2
Samsung Galaxy Tab 8.9	Android	4.0.4
Samsung Galaxy Tab 10	Android	4.1.1
Dell Streak 7	Android	2.2.2
Asus Transformer TF101	Android	4.0.3
Toshiba THRIVE Tablet AT105	Android	4.0.4
Sony Tablet S SGPT111US	Android	3.2
Lenovo Thinkpad Tablet	Android	4.0.3
Motorola XOOM	Android	4.0.3
Blackberry Playbook	Blackberry	1.0.5.2342
Acer A700	Android	4.0.4



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**Table 8 Supplicant Devices Tested for Healthcare**

Supplicant Information	
Device	Version
Cisco AnyConnect	3.1.00495/ 3.1.04059
Microsoft Windows ZeroConfig	Windows XP Pro, Win7 , Windows 8 , Intel Proset , HP Connection Manager



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**Table 9 Other Client Devices Tested for Healthcare**

Other Client Information	
PDA/Handhelds	Version/Comments
Motorola MC75A (Healthcare version)	WM 6.5 Classic/CE OS 05.02.21840
Tags/Exciters	Version/Comments
AeroScout Active RFID Tags	T2, T2 w/Call Button, T3, T4, T5h, T6
AeroScout EX2000B Exciters	BOOT 60702/DSP 30811
AeroScout EX3210 Exciters	BOOT 60702/DSP 30811
Ekahau Active RFID Tags (CCX Mode)	T301A, T301B, T301BD, T301Ex, T301i, T301is, T301t, T301W
Medical Devices	Version/Comments
CareFusion Alaris PC 8015 Series IV Pumps w/Systems Manager	PCU SW: 9.12.0.10, System Maintenance Ver : v9.8 Alaris Systems Manager – v3.3 Motorola LA-5137
Dräger Infinity Delta Monitors w/Central Station	VFW-8.3
Dräger M300 Monitors w/Central Station	VF8.10
Philips IntelliVue X2/MP2 Patient Monitors w/Central Station	App Sw - J Version J.10.33 / Radio SW version A.01.09 / Hw Revision – A.00.12
Philips IntelliVue MX40 Patient Monitors w/Central Station	Sw Version B.01.29/B.01.33 / Hw Rev A.01.00
Baxter Spectrum Smart IV Pumps ( b radio battery Module)	Sw version - v6.02.06 / Sharp 0177B / PIC :066 / CPLD : 7 / SmartBatt Charger : 17.01 /Network Module : 13
Baxter Spectrum Smart IV Pumps ( b/g radio battery Module)	Sw version - v6.02.06 / Sharp 0177B / PIC :066 / CPLD : 6 / SmartBatt Charger : 17.01 / Network Module : 16
Other	Version/Comments

**Table 10 Collaboration Client Applications Tested in Healthcare**

Collaboration Client Information	
Device	Version
Cisco Jabber for Windows	9.2(2) / 9.2(3)
Cisco Jabber for Mac	8.6.6
Cisco Jabber for Android for Samsung S3	9.1.3.4681
Cisco Jabber for iphone	9.1.3.21455
Cisco Jabber for iPad	9.3 (21386)
MS Lync Client 2013 for Windows	15.0.4420.1017

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## Retail Vertical Market

### What Was Tested

- Cisco Wireless LAN Controller ( Cisco Flex 7500, WiSM2, 5508, 2504 and 7510 Integrated) N-1 and N-2 upgrades (N-2, N-1 being previous major releases and N being current version).
- Cisco Prime NCS (NCS) N-1 Upgrade (N-1 being the previous major release and N being current version).
- Cisco Mobility Services Engine (MSE) Appliance N-1 Upgrade (N-1 being the previous major release and N being current version).
- Simultaneous client Encryption/Authentication modes (e.g. WEP, WPA, 802.1x with various methods).
- Layer 2 (inter/intra controller) and Layer 3 roaming scenarios (inter/intra controller with voice and data clients).
- High Availability (including Controller/AP, access layer failover testing).
- Voice clients including the Cisco 7920/7921 with PTT.
- Handheld clients including Symbol handhelds(MC9090, MC7090, MC3090, MC5590), Intermec handhelds(CK3, CN3, CK31), Psion 7535 G2, and PSC handhelds(Falcon 4420)
- Application-specific and Point of Sale scenarios with various Symbol, Intermec, HHP, Falcon handhelds, Zebra QL320 plus printers, Hobart wireless scales, Cisco's video surveillance solution.
- Hybrid-REAP with central and local switching, web-auth with roaming, voice, L2 roaming, CCKM, and IGMP snooping
- Guest Access (wired and wireless) with various authentication ( open / local account / RADIUS account )
- Location tracking with data/voice clients and active Intermec, tags.
- Client interoperability testing with CCX and non-CCX handhelds, smart phones, laptops.
- Radio Resource Management (RRM) functionality
- IRCM(Inter Release Controller Mobility) with Layer 2 / Layer 3 roaming
- ClientLink with legacy clients



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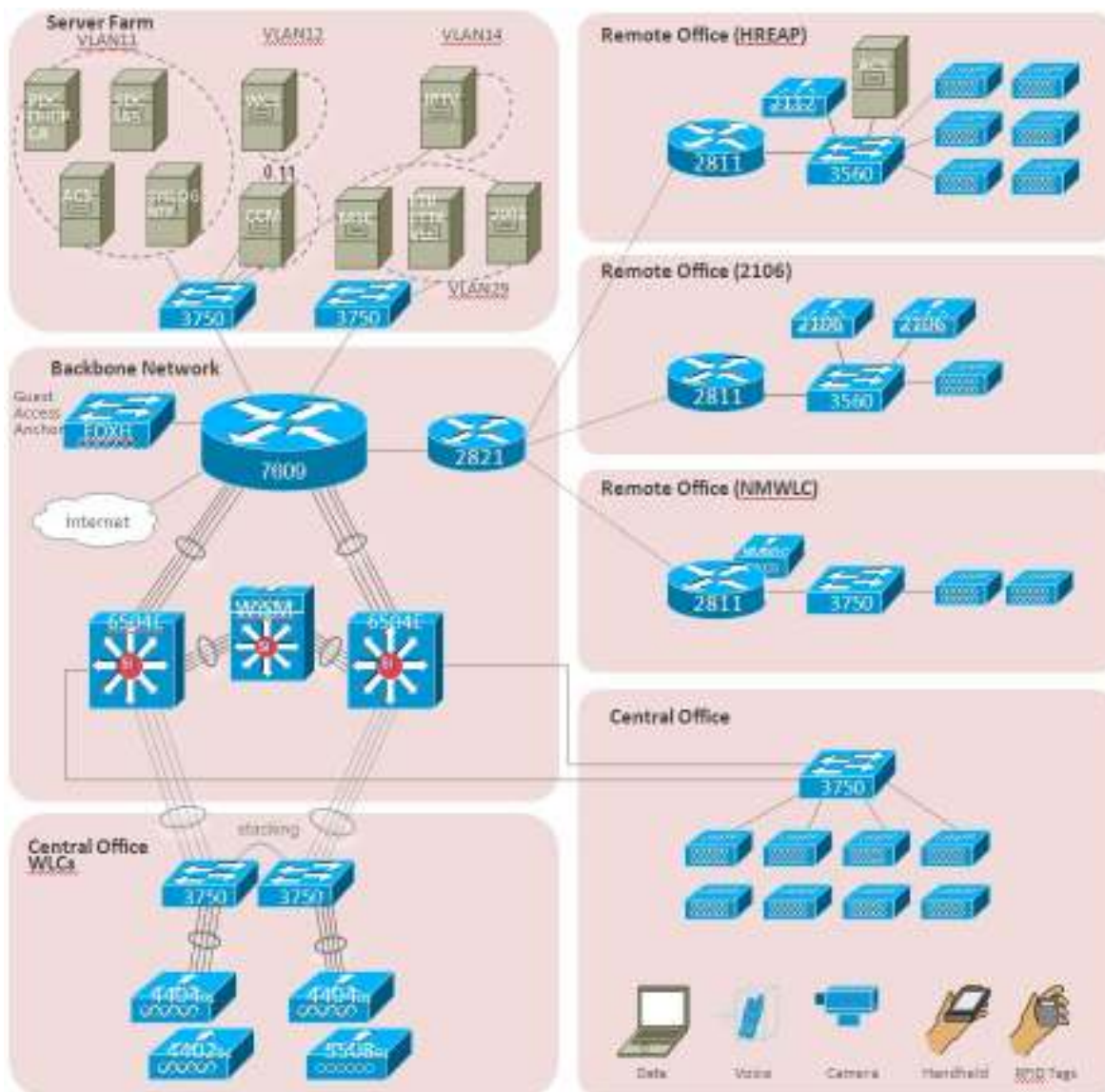
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## Retail Test Topology

Figure 2 shows the test topology for the Retail vertical market.



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## Devices and Software Tested

The following devices and software were tested as part of the AssureWave Retail vertical market.

**Table 10 Infrastructure Device Devices Tested for Retail**

Infrastructure Device Information	
Device	Version
WS-C6504-E w/WS-SUP720-3B w/WS-X6548-GE-45AF w/WS-SVC-WISM-2-K9	12.2(33)SXJ1
WS-C3750G-24PS-S WS-C3750X-48PS-S WS-C3750E-24PS	15.0(1)SE3, 12.2.(53)SE2
CISCO7609 w/WS-SUP720-3B w/WS-X6548-GE-45AF WS-SVC-FWM-1-K9	12.2(33)SXJ2
Cisco 2611XM Terminal Servers (4)	12.3(6f)
Cisco 2811/2821 ISR	12.4 (24)T

**Table 11 Controller and Access Point Devices Tested for Retail**

Controller/AP Information	
Device	Version
WS-SVC-WiSM2-1-K9	7.4.121.0
AIR-WLC5508-500	7.4.121.0
AIR-WLC5508-500	7.4.121.0
AIR-WLC7500-A-K9	7.4.121.0
AIR-WLC7500-A-K9	7.4.121.0
AIR-WLC2504-K9	7.4.121.0
WS-SVC-WiSM1-1-K9	7.0.240.0
AIR-LAP1242AG-A-K9	7.4.121.0
AIR-LAP1131AG-A-K9	7.4.121.0
AIR-LAP1602E/I-A-K9	7.4.121.0
AIR-LAP2602E/I-A-K9	7.4.121.0
AIR-LAP3602E/I-A-K9	7.4.121.0
AIR-LAP1252AGN-A-K9	7.4.121.0
AIR-AP1242AG-A-K9	7.4.121.0



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Controller/AP Information	
Device	Version
AIR-AP1131AG-A-K9	7.4.121.0
AIR-AP1232AG-A-K9	12.3(8)JEB (as WGB)
AIR-AP1242AG-A-K9	12.4(21a)JA1 (as WGB)

**Table 12 Network Server Devices Tested for Retail**

Network Server Information	
Device	Version
Microsoft DHCP Server	Windows 2003 SE/SP1 Server
Microsoft DNS Server	Windows 2003 SE/SP1 Server
Microsoft TFTP/FTP Server	Windows 2003 SE/SP1 Server
Cisco ACS Radius Server	5.2.0.26
Microsoft CA	Windows 2000 Server/SP4
Cisco Unified Call Manager (CCM)	v7.1.5.33900-10
Cisco Prime Infrastructure	1.3.1
Cisco MSE 3350	7.4.121.0
Cisco IPTV Server	3.5.7.1 (on Windows 2000/SP4 Server)
Linux RH SYSLOG Server	Linux RH Enterprise AS4
Linux RH NTP Server	Linux RH Enterprise AS4
Cisco Identity Services Engine (ISE)	1.2.0.899(Patch 3 )
Point Of Sale Server	Windows 2003 SE/SP1 Server
Cisco Video Surveillance Operations Manager	SUSE Linux / Cisco VSOM v6.3.1

**Table 13 Voice Client Devices Tested for Retail**

Voice Client Information	
Device	Version
Cisco 7921 Phone	1.4.2

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**Table 14 Laptop Clients Devices Tested for Retail**

Laptop Client Information			
Device	OS	Chipset	Driver
HP Compaq 6910p	WinXP pro/SP3	Intel 4965ABGN	14.3.2.1
IBM T61	WinVistaBus/SP2	Intel 4965AGN	14.3.2.1
IBM T61	Win XP pro/SP3	Intel 4965AGN	14.3.2.1
MacBookAir	MacOS 10.5.8	AirPort Exteme ABGN (Broadcom BCM43xx 1.0)	5.10.91.21
Asus Eee Box B202	WinXP home/SP3	Ralink 802.11n wireless	1.1.0
Dell E5410	Win7 pro	Intel 6300AGN	15.1.1.1
Dell inspiron 1525	Win XP pro/SP3	Dell 1505 draft 11n	4.170.25.12
Toshiba	Win Vista home	Intel 3945AG	13.4.0.139
Cisco	CB Adaptor	CB21ag	4.2
Fujitsu	Win 7	Intel Advanced 6205	15.1.1.1
Fujitsu	Win 7	Intel Advanced 6205	14.0.0.113
Sony Vaio	Win 7	Intel 6200 AGN	13.3.0.24
HP 6450B	Win 7	Broadcom 43224 A/G/N	5.60.48.36
HP mini and a Realtek	Win 7	RT3090 B/G/N version	3.1.16.1
Compaq mini with version	Win 7	Broadcom 4313 B/G/N	5.60.350.11 driver

**Table 15 Supplicant Devices Tested for Retail**

Supplicant Information	
Device	Version
Cisco Secure Services Client	5.1.1.18
Intel ProSet	14.1.1.0, 14.2
Cisco Aironet Desktop Utility	4.5.0.84
Microsoft Windows ZeroConfig	Windows XP Pro, Vista
OAC (Odyssey)	4.52, 4.60
Fusion (windows CE)	2.57.0.0.022B-CE-PHOTON
Fusion (Windows Mobile)	2.55.1.0.010R-WM-PHOTON

**Table 16 Other Client Devices Tested for Retail**

Other Client Information	
PDA/Handhelds	Version/Comments

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Other Client Information	
PDA/Handhelds	Version/Comments
Intermec CK31 (2), 761 (2)	WinCE 4.20.0/FW 3.00.19.0748
Intermec CK3	WinMobile 6.1
Intermec CN3	WinCE 5.0
Intermec CK30	WinCE.NET
Psion 7535 G2	WinCE 5.0
Psion Workabout Pro Gen II	WinCE 5.0
PSC Falcon 4420 (27)	WinCE 4.20.0/FW 1.80
Symbol MC9060G (4)	WinCE 4.20.0/Version 3.17
Symbol MC9090CR	Windows Mobile 5.0
Symbol MC9060G	WinCE 4.20.0/Version 3.17
Symbol MC7090	Windows Mobile 5.0
Symbol MC3090	WinCE 5.0
Symbol MC5590	Windows Mobile 6.5
Symbol WT4090	WinCE 5.0
Symbol PPT8846	WinCE 4.20
Symbol MK2250	WinCE 4.20/ AirBEAM CE client 2.16
Tags/Exciters	Version/Comments
Datalogic FalconX3	Windows Mobile 6.3 Pro , Summit Client Utility version 3.03.11

Other	Version/Comments
Cisco VTAdvantage w/Camera	2.0.1
Intermec CV60	Mobile Vehicle Computer/WinXP
Intermec CV30	Mobile Vehicle Computer/WinCE 5.0
Motorola VC5090	Mobile Vehicle Computer/WinCE 5.0
Zebra QL320 , QL420	11.71
Cisco CIVS-IPC-2500W	Wireless IP camera v1.1 (802.11bg)
TRENDnet TV-IP410W/A IP Camera	Wireless IP camera (802.11bg)
Hobart QUANTUM	Wireless scale With Symbol Spectrum NIC (802.11b)
Hobart QUANTUM	Wireless scale with Cisco CB21AG NIC


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## Higher Education Vertical Market

### What Was Tested

- Cisco Wireless LAN Controller (WiSM and 5508) N-1 and N-2 upgrades (N-2, N-1 being previous major releases and N being current version).
- Cisco Prime NCS (NCS) N-1 Upgrade (N-1 being the previous major release and N being current version).
- Cisco Mobility Services Engine (MSE) N-1 Upgrade (N-1 being the previous major release and N being current version).
- Cisco Mobility Services Engine (MSE) Appliance N-1 Upgrade (N-1 being the previous major release and N being current version).
- Simultaneous client Encryption/Authentication modes (e.g. WEP, WPA, WPA2, WebAuth, and 802.1x with various methods).
- Layer 2 (inter/intra controller) and Layer 3 roaming scenarios, with and symmetric tunneling.
- High Availability (including Controller/AP, access layer failover testing) with HSRP and redundant supervisors for WiSM modules.
- Guest Access (wired and wireless) with various authentication methods.
- Multicast Traffic to Wireless Clients.
- Device profiling
- BitTorrent file sharing traffic to Wireless Clients.
- Networked Gaming Applications between Wireless Clients.
- Rogue Access Point and Rogue Client detection and containment.
- Security applications and appliances scanning/attacking network infrastructure including but not limited to Codenomicon, QualysGuard, NMAP, and Nessus.
- Radio Resource Management (RRM) functionality



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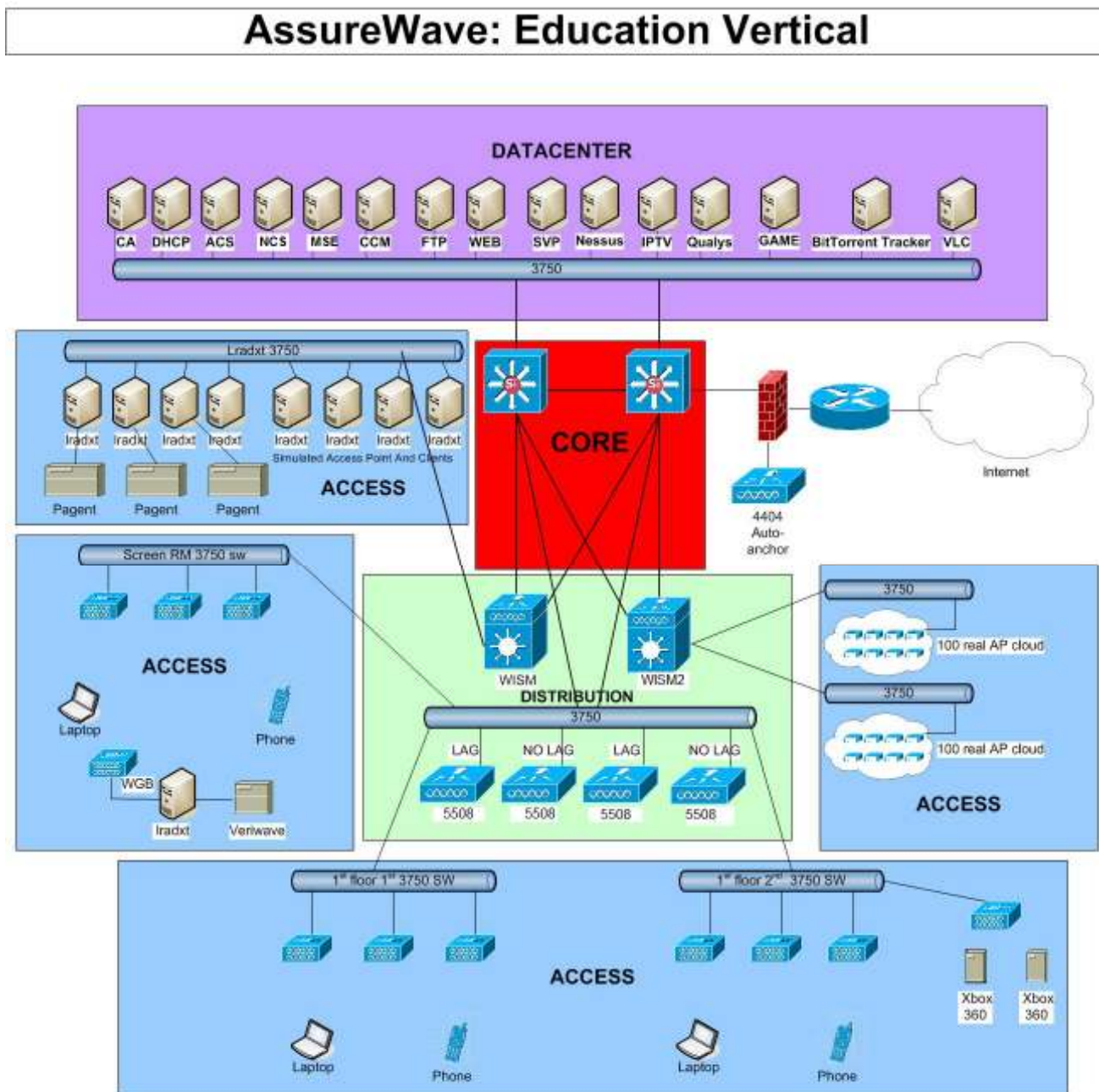
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## Education Test Topology

Figure 3 shows the test topology for the Higher Education vertical market.



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## Devices and Software Tested

The following devices and software were tested as part of the AssureWave Higher Education vertical market.

**Table 17 Infrastructure Devices Tested for Education**

Infrastructure Device Information	
Device	Version
WS-C6504-E w/WS-SUP720-3B w/WS-X6548-GE-45AF w/WS-SVC-WISM-1-K9 w/WS-SVC-WISM-2-K9	12.2(18)SXF7 12.2(33)SXJ
WS-C3750G-24PS-S WS-C3750G-48PS-S WS-C3750E-24PD	12.2(25)SEE3, 12.2(44)SE, 12.2(37)SE1, 12.2(25)SEB4,
CISCO7609 w/WS-SUP720-3B w/WS-X6548-GE-45AF	12.2(18)SXF
Cisco 2611XM Terminal Servers (3)	12.4(12)
Catalyst 4506	12.2(40)SG(2.41)

**Table 18 Controller and Access Point Devices Tested for Education**

Controller/AP Information	
Device	Version
AIR-WLC5508-500	7.4.121.0
AIR-WLC7500-A-K9	7.4.121.0
WS-SVC-WISM-1-K9	7.0.240.0
WS-SVC-WISM-2-K9	7.4.121.0
AIR-LAP1142N-A-K9	7.4.121.0
AIR-AP1131AG-N-K9	7.4.121.0
AIR-LAP1242AG-A-K9	7.4.121.0
AIR-AP1252AG-A-K9	7.4.121.0
AIR-LAP1252AG-A-K9	7.4.121.0
AIR-LAP3602E-A-K9	7.4.121.0
AIR-LAP1602E/I-A-K9	7.4.121.0
AIR-LAP2602E-A-K9	7.4.121.0
AIR-LAP3502E-A-K9	7.4.121.0
AIR-AP1242AG-A-K9	12.4(10b)JA (as WGB)



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**Table 19 Network Server Devices Tested for Education**

Network Server Information	
Device	Version
Microsoft DHCP Server	Windows 2008 R2 Server
Microsoft DNS Server	Windows 2008 R2 Server
Microsoft TFTP/FTP Server	Windows 2003 SE/SP1 Server
Cisco ACS Radius Server	4.1 (on Windows 2000/SP4 Server)
Microsoft CA	Windows 2003 Server/SP2
Cisco Unified Call Manager (CCM)	5.1.3.7000-5
BitTorrent Tracker	BNBT EasyTracker 7.7r3.2004.10.27
VLC Media Player	0.9.9a
Cisco Prime Infrastructure	1.3.1
Cisco Identity Services Engine (ISE)	1.2.0.899(Patch 3 )
Cisco MSE Appliance	7.4.121.0
Cisco IPTV Server	3.5.7.1 (on Windows 2000/SP4 Server)
Linux RH SYSLOG Server	Linux RH Enterprise AS4
Linux RH NTP Server	Linux RH Enterprise AS4
Qualys	QualysGuard Enterprise
BitTorrent Server/Client	Azureus 3.0.4.2

**Table 20 Laptop Client Devices Tested for Education**

Laptop Client Information			
Device	OS	Chipset	Driver
Apple PowerBook	10.6.7	Airport A/G/N	1.0 5.10.131.36.9
Apple MacBook	10.6.7 10.6.8	Airport A/G/N	1.0 5.10.131.36.9 1.0 5.10.131.42.4
Apple MacBook Air	10.6.7	Airport A/G/N	1.0 5.10.131.36.9
Apple MacBook	10.7 10.7.4	Airport A/G/N	1.0 5.100.98.75.6 1.0 5.106.198.4.2
Apple MacBook	10.6.7	Airport A/G/N	1.0 5.10.131.36.9
Sony VGN-N350E	Microsoft Vista	Intel 3945ABG	13.4.0.139
Sony VGN-N250N	Microsoft Vista	Intel 3945ABG	13.4.0.139
Sony VGN-N1306	Microsoft XP	Intel 3945ABG	13.4.0.139
Compaq Presario C500	Microsoft Vista	Broadcom 802.11BG	4.102.15.56
Compaq Presario V6000	Microsoft Vista	Broadcom 802.11BG	4.102.15.56

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Laptop Client Information			
Device	OS	Chipset	Driver
Compaq 5201US	Microsoft Vista	Broadcom 802.11BG	4.10.40.1
HP Compaq nx9420	Microsoft Vista	Intel 3945ABG	13.4.0.139
HP Mini 1035NR	Microsoft XP	Broadcom 802.11B/G	4.170.77.3
Lenovo T60 ThinkPad	Microsoft Vista	Intel 3945ABG	13.4.0.139
Lenovo X60s ThinkPad	Microsoft XP	Intel 4965AGN	14.3.0.6
Lenovo 3000 N100	Microsoft Vista	Broadcom 802.11BG	4.102.15.56
Toshiba A135-S4427	Microsoft Vista	Intel 3945ABG	13.4.0.139
Toshiba A135-S4447	Microsoft Vista	Intel 3945ABG	13.4.0.139
Toshiba A135-S4467	Microsoft Vista	Intel 3945ABG	13.4.0.139
Toshiba A135-S2386	Microsoft Vista	Atheros AR5006EG	7.1.0.90
Toshiba Satellite A205-S4639	Microsoft Vista	Intel 4965AGN	13.4.0.139
Toshiba Satellite P205-S6267	Microsoft Vista	Intel 4965AGN	12.4.0.21
Toshiba Satellite A205-S4577	Microsoft Vista	Intel 3945ABG	12.4.0.21
Toshiba Tecra A6-EZ6411	Microsoft Vista	Intel 3945ABG	12.4.0.21
Lenovo W510	Windows 7	Intel 6300 AGN	15.1.1.1
Toshiba Satellite A205-S4577	Microsoft Vista	Intel 5100 N	14.3.0.6

**Table 21 Supplicant Devices Tested for Education**

Supplicant Information	
Device	Version
Cisco Secure Services Client	5.1.0.56
Intel ProSet	12.4.0.21, 14.2, 15.1.1.1
ADU	4.4.0.88
ZeroConfig	(with Windows)

**Table 22 Other Devices Tested for Education**

Other Device Information	
PDA/Handhelds	Version/Comments
Microsoft Xbox 360	Microsoft Xbox 360 Wireless Adapters
Apple iPod Touch Gen2	Version 6.0 (10A403)
Brother MFC-845CW	Wireless Printer
Apple iPhone 4, 4S	Version 7.0.4
Apple iPad	Version 4.3 (8F190) , 5.1.1 ( 9B206)

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Apple iPad2	Version 7.0.4
Apple iPad3	Version 7.0.4
Lexmark Wireless Printer	Pinnacle Pro 901
Samsung Galaxy Tab 7	2.2.1
Kindle Fire	6.0



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## Enterprise Vertical Market

### What Was Tested

- Cisco Wireless LAN Controller (5508, 4402, 4404, WiSM, WiSM-2, Cisco Flex 7500 and 3750 Integrated) N-1 and N-2 upgrades (N-2, N-1 being previous major releases and N being current version).
- Cisco Prime NCS (NCS) N-1 Upgrade (N-1 being the previous major release and N being current version).
- Cisco Mobility Services Engine (MSE) Appliance N-1 Upgrade (N-1 being the previous major release and N being current version).
- Controller operation with LAG.
- Controller operation with multiple AP managers to cover different customer flavors (WISM-only support LAG).
- Multicast operation with unicast mode.
- Multicast operation with multicast mode.
- 16 WLANs configured with different types of security and class of service—802.1x, WPA/WPA2 (LEAP/PEAP/TLS), web-auth, etc.
- Multicast operation with PIM sparse-dense mode in wired network routing.
- Controller, AP, authentication servers operating across MPLS VPN network.
- Six controllers configured in one roaming domain.
- For layer3 roaming, both symmetric tunnel and un-symmetric tunnel cases are covered. The controllers are configured in the same mode, either symmetric tunnel or un-symmetric tunnel).
- Flex mode controller and AP support
- Layer2 roaming (CCKM and non-CCKM).
- Auto-anchor and auto-anchor N+1.
- WGB (including layer 2 and layer 3 roaming).
- TACACS+ for controller administration and accounting.
- Wired guest access.
- IDS and IPS.
- Radio Resource Management (RRM) functionality
- Voice Calls with Cisco 7920/7921 IP phones and Spectralink.
- Network redundancy with HSRP and controller redundancy with configuring primary/secondary/tertiary controllers.
- Controllers trunked to Catalyst 3750 switches with the management interfaces of the controllers and access points deployed in different subnets.
- Hybrid-REAP support, including central switching and local switching.
- Controller access controller and traffic control via access-list.




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- Longevity test with multiple SNMP walk to cause CPU as high as 90%
- Lradxt to simulate 150 APs and 3000 clients.
- Roaming during heavy traffic.
- 120 simulated clients with Veriwave.
- Reliable multicast for video



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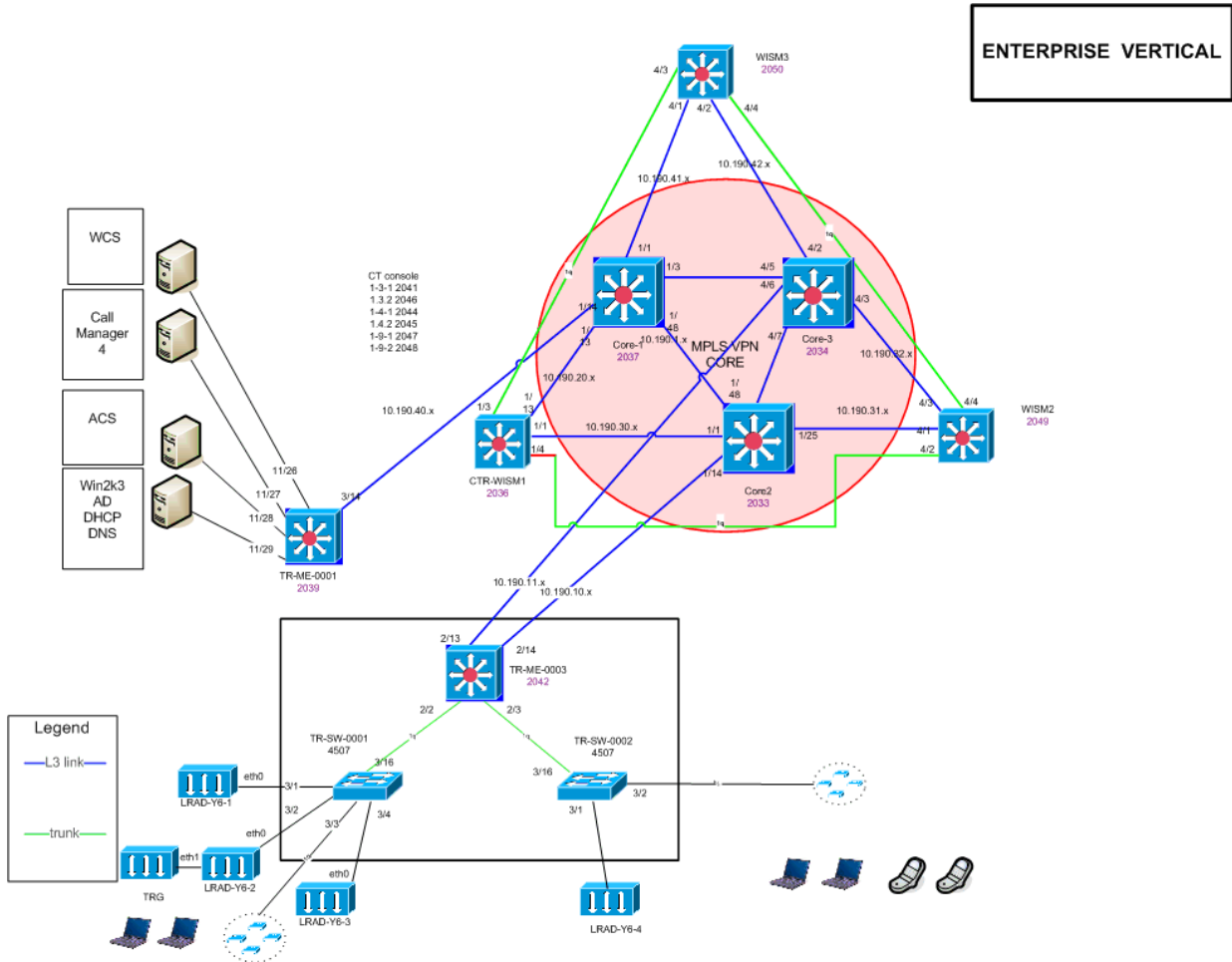
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## Enterprise Test Topology

Figure 4 shows the MPLS/VPN based core test topology for the Enterprise vertical market.

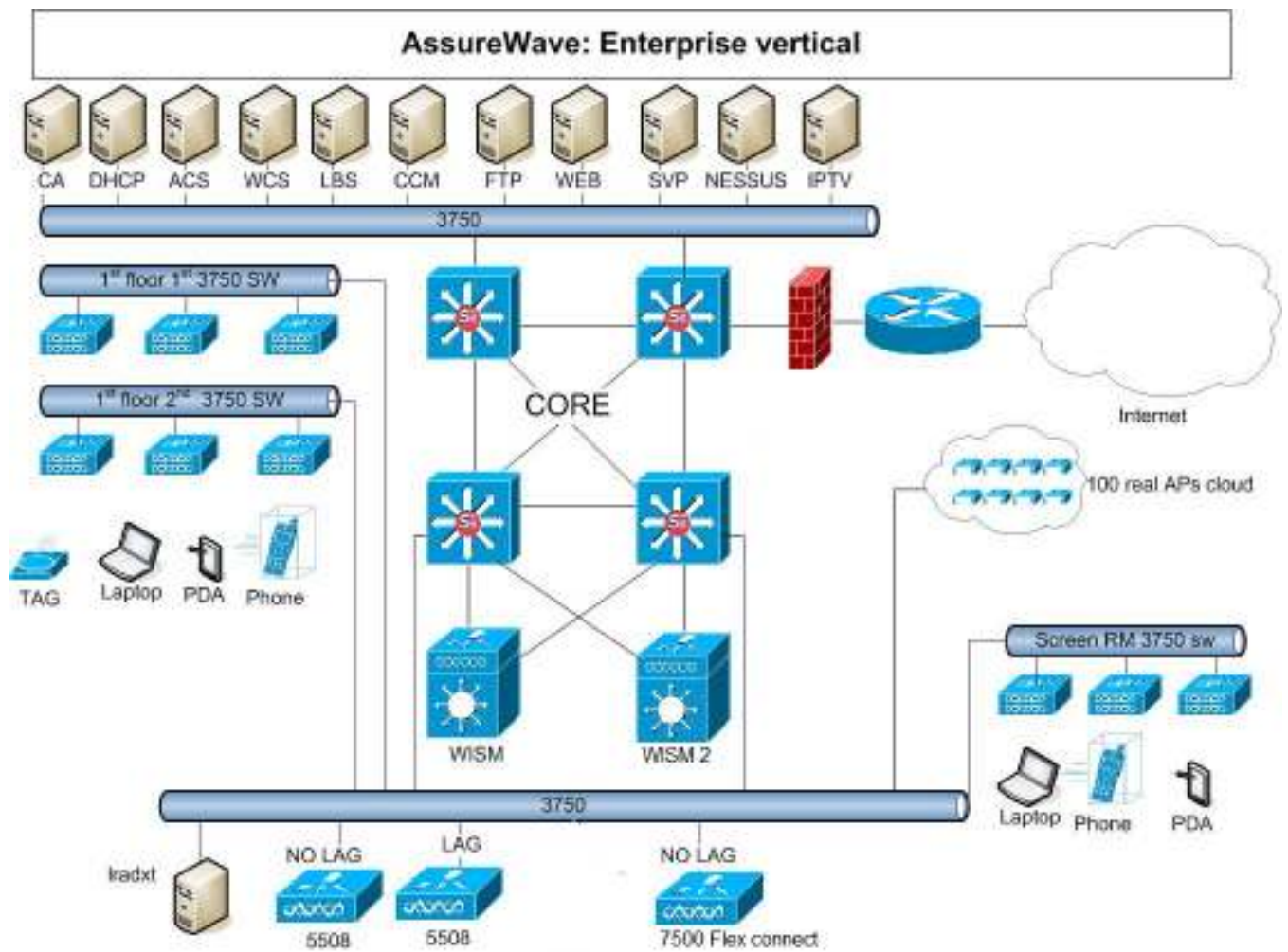


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Figure 5 shows the standard IP core network.



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## Devices and Software Tested

The following devices and software were tested as part of the AssureWave Enterprise vertical market.

**Table 23 Infrastructure Devices Tested for Enterprise**

Infrastructure Device Information	
Device	Version
WS-C6504-E w/WS-SUP720-3B w/WS-X6548-GE-45AF w/WS-SVC-WISM-1-K9 WS-C6509-E w/WS-SVC-WISM-1-K9 w/WS-SVC-WISM-1-K9 w/WS-SVC-WISM2-K9	12.2(18)SXF12 122(33).SXJ
WS-C3750G-24PS-S WS-C3750G-48PS-S WS-C3750E-24PS-S	12.2(40)SE
CISCO7609 w/WS-SUP720-3B w/WS-X6548-GE-45AF w/WS-SVC-FWM-1-K9	12.2(18)SXF7
Cisco 2611XM Terminal Servers	12.3(6f)

**Table 24 Controller and Access Point Devices Tested for Enterprise**

Controller/AP Information	
Device	Version
AIR-WLC5508-500	7.4.121.0
AIR-WLC7500-A-K9	7.4.121.0
WS-C3750G-24WS-S25	7.4.121.0
WS-SVC-WISM-1-K9	7.0.240.0
WS-SVC-WISM-2-K9	7.4.121.0
AIR-LAP1242AG-A-K9	7.4.121.0
AIR-LAP1131AG-A-K9	7.4.121.0
AIR-LAP1240AGN-A-K9	7.4.121.0
AIR-LAP1142N-A-K9	7.4.121.0
AIR-LAP1262N-A-K9	7.4.121.0
AIR-LAP3502E-A-K9	7.4.121.0
AIR-LAP1042N-A-K9	7.4.121.0
AIR-LAP3602E/I-A-K9	7.4.121.0



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Controller/AP Information	
Device	Version
AIR-LAP1602E/I-A-K9	7.4.121.0
AIR-LAP2600E-A-K9	7.4.121.0
AIR-AP1242AG-A-K9	7.4.121.0
AIR-AP1131AG-A-K9	7.4.121.0
AIR-AP1232AG-A-K9	12.3(11)JX1 (as WGB)
AIR-AP1242AG-A-K9	12.4(10b)JA (as WGB)
AIR-AP1131AG-A-K9	12.4(10b)JA (as WGB)

**Table 25 Network Server Devices Tested for Enterprise**

Network Server Information	
Server Type	Version
Microsoft AD, DHCP, DNS, TFTP and FTP Services	Windows 2003 SE/SP1 Server
Microsoft CA Services	Windows 2000/SP4 Server
Cisco ACS Radius Server	4.2 (on Windows 2003 SE/SP1 Server)
Cisco ACS Appliance Server	5.0 appliance 5.2.0.26
Cisco Unified Call Manager (CUCM)	8.0.3
Cisco Prime Infrastructure	1.3.1
Cisco IPTV Server	3.5.7.1 (on Windows 2000/SP4 Server)
Linux RH SYSLOG Server	Linux RH Enterprise AS4
Linux RH NTP Server	Linux RH Enterprise AS4
Spectralink SVP-100 Server	173.028/174.028/175.028 (SCCP)

**Table 26 Application Software Products Tested for Enterprise**

Application Software Information	
Application	Version
IPTV scheduled and on demand	v3.4
v-brick media appliance	V2.0.0b

**Table 27 Voice Client Devices Tested for Enterprise**

Voice Client Information	
Device	Version
Cisco 7921 Phone	1.4.2

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**Table 27 Laptop Client Devices Tested for Enterprise**

Laptop Client Information			
Device	OS	Chipset	Driver
Acer Aspire 3623WXCi	WinXP/SP2	Atheros AR5005G	4.0.0.14001
Acer Aspire 3624WXMi	WinXP/SP2	Atheros AR5005G	5.3.0.35
Acer Aspire 5610-4537	Vista/HP	Intel 3945ABG	13.4.0.139
HP Probook 4710s	WinXP/SP2	Intel 5100 AGN	14.3.2.1
Toshiba Satellite A105	WinXP/SP2	Intel 3945ABG	13.4.0.139
Toshiba Satellite A135	Vista/HP	Intel 3945ABG	13.4.0.139
Toshiba Tecra 8000	WinXP/SP2	Cisco CB21ABG	4.5.0.310
HP 6530b	WinXP/SP2	Intel 5100 AGN	14.3.0.6
Toshiba U205	Vista/HP	Intel 3956ABG	13.4.0.139
Compaq 5201US	Microsoft Vista	Broadcom802.11BG	4.10.40.1
HP Compaq nx9420	Microsoft Vista	Intel 3945ABG	13.4.0.139
Lenovo T60 ThinkPad	Microsoft Vista	Intel 3945ABG	13.4.0.139
Lenovo T61 ThinkPad	Microsoft XP	Intel 4965ABG	15.1.1.1
Lenovo X60s ThinkPad	Microsoft XP	Intel 3945ABG	13.4.0.139
Lenovo 3000 N100	Microsoft Vista	Broadcom802.11B	4.102.15.56
Fujitsu Lifebook A-Series	Microsoft Vista	Broadcom802.11BG	7.1.0.90
Lenovo W510 ThinkPad	Windows 7	Intel 6300 N	15.1.1.1

**Table 28 Supplicant Devices Tested for Enterprise**

Supplicant Information	
Device	Version
Cisco Secure Services Client	4.2, 5.0.1
Intel ProSet	13.5.0, 14.2, 15.1.1
Cisco Aironet Desktop Utility	4.5.0.88
Microsoft Windows ZeroConfig	Windows XP Pro, Vista

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## AssureWave Test Summary and Recommendation

### Test Summary

The AssureWave certification for this release is **Pass**.

Please refer to the 7.4.121.0 Release Notes for additional information pertaining to this release. Carefully review the Open Caveats list below to make a determination if any of these issues may affect your installation

We summarize our testing results into three categories:

- **Pass**—The underlying assumption for certifying and publishing a Cisco AssureWave release is that testing passed because all individual tests passed. Failure of any test has to be properly resolved or closed, or the Cisco AssureWave engineering team must determine that the defect that caused failure will not affect network performance.
- **Fail**—If a given test fails and the effect on Cisco's customer base is deemed broad enough, the entire release fails. Failed releases are neither certified nor documented. If a test fails and the effect on the customer base is determined to be minor, the release may still be certified, with Distributed Defect Tracking System entries noted so that customers can review the testing to see if they are affected.

### Open Caveats

This release contains the following significant open caveats

For the entire list please review the release notes

<http://www.cisco.com/c/en/us/td/docs/wireless/controller/release/notes/crn74mr02.pdf>

**CSCud50209 Symptom: Controller fails when the management user form post is manipulated.**

**Conditions:** Management user fields are modified.  
**Workaround:** None.

**CSCsz82878 Symptom: Controllers using Release 4.2.130.181M (Mesh) crash with Task Name: reaperWatcher.**

**Conditions:** Multiple WiSM controllers use Release 4.2.130.181M and have many Cisco Aironet 1510 Lightweight Outdoor Mesh Access Points associated to them.

**Workaround:**

1. To disable the dynamic CAC tree updates, enter this command:  
config mesh cac disable
2. To enable the dynamic CAC tree updates, enter this command:  
config mesh cac enable



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**CSCts20040 Symptom: Controller crashes when SXP parameters like default password are updated** or SXP is disabled/enabled.

**Conditions:** Reboot with a version 1 SXP connection.

**Workaround:** Delete the version 1 SXP connection before you change any SXP settings.

**CSCty84682 Symptom: Access point does not forward multicast data and IGMP query messages.**

**Conditions:** Reload of an access point.

**Workaround:** Shutdown the interface to the WLAN and bring it up again.

**CSCuc32335 Symptom: Local mode access points associated to controller lose their configuration and get reset to factory defaults.**

**Conditions:** Cisco 3602 Access point and Cisco 5500 Series Wireless LAN Controller using Release 7.2.103.0. Local mode access point loses power. Shut or no shut is configured on the PoE port.

**Workaround:** None.

**CSCuc45005 Symptom: Controller stops working while using Release 7.3.101.0.**

**Conditions:** None.

**Workaround:** None.

**CSCuc68995 Symptom: Wireless WebAuth clients are unable to authenticate to the network. A blank window appears when the client opens a browser window. When you use the debug web-auth redirect command, the following messages appear:**

\*webauthRedirect: Oct 15 18:43:19.470: #EMWEB-6-REQUEST\_IS\_NOT\_GET\_ERROR:

webauth\_redirect.c:1055 Invalid request not GET on client socket 72 or

\*webauthRedirect: Oct 10 16:36:30.715: %EMWEB-3-PARSE\_ERROR: parse error after reading. bytes parsed = 0 and bytes read = 189

**Conditions:** HTTP GET from the client arrives at the controller in multiple TCP segments.

**Workaround:** Reconfigure your network and the client's TCP/IP stack to ensure that the HTTP GET arrives in a single segment. An example of a client software that introduces TCP segmentation is AnyConnect Web Security 3.0.3054.

**CSCuc93681 Symptom: Controller stops working intermittently and the crash log contains the following message: Software Failed on instruction at : pc = 0x10a5fdfc (read\_socket 492) ra = 0x10a5ff34 (read\_socket 492)**

**Conditions:** Controller using any Release from 7.0 to 7.4.

**Workaround:** None.

**CSCue46710 Symptom: Controller stops responding during scale stress tests. CPU utilization remains at around 26 percent.**

**Conditions:** Around 6000 APs and 64000 clients are associated with the controller.

**Workaround:** None.

**CSCue51812 Symptom: Clients do not associate with the access point, clients gain network access and roam frequently.**

**Conditions:** Band select is configured with default parameters or with low values. For example, probe cycle is 1 and suppression window is 100 ms.

**Workaround:** Disable Band select when there are multiple clients.

**CSCuf03454 Symptom: Controller stops responding.**

**Conditions:** Web pass-through clients are anchored from foreign controller to anchor controller.

**Workaround:** Reboot the controller.



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**CSCuf54559 Symptom: Controller stops responding.****Conditions:** When you use the **show mdns profile detailed default-mdns-profile** command.**Workaround:** Do not use this command.**CSCui87160 Symptom: Cisco 5500 Series WLC stopped working due to an issue with the kernel.****Conditions:** Memory leak.**Workaround:** None.**CSCuj13054 Symptom: Cisco WiSM2 stopped working after an upgrade from Release 7.3.101.0 to 7.4.110.0.****Conditions:** Upgrade.**Workaround:** None**CSCuj58556 Symptom: Cisco AP disconnects from the primary WLC and moves to the secondary WLC due to memory allocation.****Conditions:** Unknown.**Workaround:** Reboot AP.**CSCuj84379 Symptom: Cisco WLC stops responding and then reboots.****Conditions:** When ad hoc rogue detection is enabled.**Workaround:** Disabling ad hoc rogue detection is a potential workaround.**CSCul16911 Symptom: Cisco APs disconnect from the Cisco WLC due to DTLS errors.****Conditions:** Cisco AP disconnects.**Workaround:** None.**CSCuj89107 Symptom: Cisco WLC stopped working with the Task Name: spamApTask7 on Release 7.4.115.0.****Conditions:** Unknown.**Workaround:** None.**CSCug19563 Symptom: Wism2 secondary controller DP crashed due to a deadlock in high availability configuration while boot and synchronization with the primary controller.****Conditions:** The secondary controller DP crash occurs only when there are multiple reboots of the controller in a high availability configuration. The controller recovers after the reboot.**Workaround:** None.**CSCug38794 Symptom: Cisco WiSM2 stops working and then reboots.****Conditions:**

- Buffer corruption
- Low frequency issue, under investigation

**Workaround:** None.**CSCuh50505 Symptom: WiSM2 controller crashes and reboots.****Conditions:** This issue occurs when TPCv2 is enabled in the WiSM2 controller.**Workaround:** You must disable TPCv2.**Corporate Headquarters:**

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## Caveats resolved after release of 7.4.121.0

These are additional open caveats that were resolved via an engineering special. If you are impacted by any of these issues, please contact Cisco TAC on how to obtain the special.

- CSCuj58556 ap3500 lose names & configs w/ failover, malloc failure in NSI
- CSCuc32335 Local Mode APs lose config after power cycle
- CSCui95938 fast Switching SSDi and IPAD Issue
- CSCum15629 1140 AP in Flexconnect Mode crash on 7.4.110.0 due to auth timer in loop
- CSCul38572 CCKM roaming failing between a 7.0 WLC and a 7.4.
- CSCul72415 HA: need to handle almost concurrent Sanity Check & Heartbeat timeout
- CSCul85903 WLC Crash Bonjour\_Process\_Task CSCul51785 Controller Crash on WiSM
- CSCul94534 WiSM2 does not process fragmented client certificate



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