

Aruba Certified Design Associate
OFFICIAL CERTIFICATION STUDY GUIDE
(EXAM HPE6-A66)

First Edition

Leo Banville and Richard Deal

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Official Certification Study Guide (Exam HPE6-A66)
Leo Banville and Richard Deal

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This book provides information about the topics covered in the Aruba Certified Design Associate (ACDA) certification exam (HPE6-A66). Every effort has been made to make this book as complete and as accurate as possible, but no warranty or fitness is implied.

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About the Authors

Leo Banville is a senior technical trainer with expertise in how to design and implement Aruba wireless networks. He has designed numerous training courses on how to configure complex multisite network environments using Aruba products such as Airwave, MAS, IAP, and Aruba Central. Leo is a certified Aruba expert and developed the written and practical exams for the Aruba Certified Mobility Expert (ACMX) and Aruba Certified Design Expert (ACDX).

Richard Deal is an independent consultant who designs wireless networks and provides network management services for small companies. He has created and developed many networking courses and instructs IT professionals on the best ways to design and implement Aruba's wired and wireless network solutions. Richard has authored countless books on various networking topics.

Introduction

This book guides you through Aruba wired and wireless network solutions and helps you prepare for the Aruba Certified Design Associate exam (HPE6-A66). You will learn how to gather the information required to create a solution as well as how to evaluate a customer's needs, identify gaps, and translate the needs into technical requirements. You will learn how to enter this information into IRIS. You will also learn how to estimate the number of APs using VFR. You will be able to describe Aruba product line for wireless, wired, management, analysis, and security. You will learn how to design small wireless and wired network solutions, as well as gaining practical experience with the design process. To help you learn as you go, Knowledge Check questions are included in each chapter. Refer to the Appendix to verify your answers.

Aruba Education Services

Aruba Education Services offers comprehensive training and certification programs from fundamental to advanced levels across the Aruba product line.

To learn more about Aruba certifications and training, please visit:

<https://www.arubanetworks.com/support-services/training-services/>

Audience

This book is designed for individuals wanting to begin their journey in understanding the various Aruba products and using best practice design guidelines to implement small network solutions. The audience includes network technicians, network engineers, network architects, and network presales individuals.

Assumed Knowledge

This is a foundational guide that introduces you to Aruba's products and Aruba's design philosophy for small wireless and wired networks. It is assumed that you have a knowledge of basic switching and wireless technologies.

Minimum Qualifications

Typical candidates for this certification are IT associates who want to learn about the Aruba products and the tools used to help design a network. There are no prerequisites for this. However, it is helpful to have taken the Aruba Mobility Fundamentals and the Aruba Switching Fundamentals courses or read the corresponding Study Guides for these related certifications.

Relevant Certifications

The Aruba Certified Design Associate certification validates that you have the fundamental design knowledge and skills required to plan and design Aruba campus wireless and wired networks.

Preparing for Exam HPE6-A66

This self-study guide does not guarantee that you will have all the knowledge you need to pass the exam. It is expected that you will also draw on real-world experience and would benefit from completing the hands-on lab activities provided in the instructor-led training. However, the labs taught in the official course are provided for you here in this book assuming you have the correct hardware and software to perform the labs. This book covers the same material as the actual course. Therefore, to pass the certification exam, you should be intimately familiar with the material presented here. Aruba recommends reading the book and performing the labs three times before attempting the exam. Please note that successful completion of this book, corresponding course, or additional study materials alone does not ensure you will pass the HPE6-A66 exam.

Recommended Training

Recommended training to prepare for each exam is accessible from the ACDA exam page. For more information, please visit:

<https://www.arubanetworks.com/support-services/training-services/certified-design-associate/>

Obtain Hands-on Experience

You are not required to take the recommended, supported courses, and completion of training does not guarantee that you will pass the exam. Aruba strongly recommends a combination of training,

thorough review of courseware and additional study references, and sufficient on-the-job experience prior to taking an exam.

Exam Registration

To register for an exam, please follow the links provided at:

<https://www.arubanetworks.com/support-services/training-services/certified-design-associate/>

CONTENTS

1	Overview of Aruba Solutions	1
	Introduction	1
	Product Introduction	2
	Wired and Wireless Network Devices	3
	Aruba's Range of Wireless Access Points	4
	AP Terminology	4
	Aruba Managed Device Portfolio	5
	Aruba OS-Switches and Aruba OS-CX Switches	7
	Network Features	8
	Aruba Firewall Review	8
	Identity-Based Aruba Firewall	9
	AirMatch	10
	Client Match	11
	MultiZone Overview	12
	SD-Branch	12
	Dynamic Segmentation	13
	Network Management	14
	AirWave	14
	Central Management Option	15
	Activate	19
	Network Security	20
	Analysis	20
	ClearPass: The Complete Solution	20
	ClearPass Overview	21
	Device Insight	22
	Aruba ClearPass Device Insight	23
	IntroSpect	24
	IntroSpect: Finding the Malicious in the Anomalies	25
	Network Analysis	26
	Analysis	27
	User Experience Insight	27
	Aruba NetInsight	28
	Location Services: Meridian Deployment	30
	Meridian Deployment	30
	Proximity-Based Customer Engagement	31

The Network	32
Network Review	32
References	33
Knowledge Check	33
Lab Activity	34
Lab Overview	35
Lab Tasks	35
Debrief: Key Points	40
Summary	41
2 WLAN Fundamentals	43
Overview	43
WLAN Organizations	44
RF Bands and Channels	44
2.4 GHz ISM Band and Channels	45
5 GHz U-NII Band and Channels	46
Channel Bonding	47
802.11ac 5GHz allowed Channels in FCC Countries	48
Knowledge Check	50
802.11 Standards and Amendments	50
Compare 802.11a/b/g/n/ac/ax Data Standards	50
802.11h—DFS and TPC	52
802.11e—Wireless Quality of Service	53
802.11i Security	53
Wi-Fi Alliance Certifications	54
Other 802.11 Standards	55
802.11 Frame Types	56
Knowledge Check	57
RF Basics	58
RF Coverage vs. Capacity	58
Channel Availability	60
RF Problems	61
RF WLAN Interferers	62
Aruba Spectrum Analysis	63
Antenna Technology	64
Antenna Types	64
Reading AP Radiation Patterns Horizontal Plane (Azimuth)	65
Reading AP Radiation Patterns Vertical Plane (Elevation)	66
Passive E-Plane Antenna Gain	67
Passive H-Plane Antenna Gain	67
AP/Antenna Mounting Options	68

Single Input Single Output (SISO).....	69
Multipath Propagation Scenario.....	70
Multiple Input Multiple Output (MIMO)	70
Knowledge Check.....	71
RF Transmit Power.....	72
RF Power.....	72
dBm vs Milliwatts	73
dBm and mW Relationships	74
Signal to Noise Ratio (SNR).....	75
Effective or Equivalent Isotropic Radiated Power (EIRP).....	76
WLAN Mobility.....	77
WLAN Logical Configuration.....	77
Wireless Device Mobility	79
WLAN Client Mobility	79
Roaming	80
Knowledge Check.....	81
802.11ax and WPA3.....	81
802.11n/802.11ac Standards	81
802.11ax Standard	82
802.11ax Categories of Enhancements	83
WPA3.....	84
Lab Activity.....	85
Lab Overview	85
Lab Tasks.....	86
Debrief: Key Points.....	89
Summary.....	90
3 Information Gathering.....	91
Overview	91
Customer Information	91
Interview the Customer	92
Wireless RF/Network Questionnaire	93
Wired Network Questionnaire	94
Device Needs	95
Current Physical Environment.....	97
Physical Sites.....	97
Physical Environment.....	98
Devices	99
Mobile device types—Portability	100
Basic Wired Connectivity Requirements	101

Users.....	102
User Information	103
Assess Application Requirements.....	103
Assess Availability Requirements	105
Customer Checklist	106
Knowledge Check	106
Lab Activity.....	107
Lab Overview	107
Debrief: Key Points.....	113
Summary.....	115
4 Racks and Cables.....	117
Overview	117
Network Racks.....	117
Rack Introduction	118
Rack Unit (RU)	118
Patch Panels and Cable Organizers	119
Network Closets.....	120
IDF/MDF Closets.....	121
Cables	122
Consider the Media: Copper.....	122
Smart Rate	124
Cable Runs.....	125
Power over Ethernet (PoE).....	126
Consider the Media: Fiber and DAC	127
1GbE and 10GbE Fiber	128
40GbE and 100GbE Fiber	130
Transceivers.....	130
Knowledge Check	134
Lab Activity.....	134
Lab Overview	134
Lab Tasks.....	135
Lab Debrief	138
Summary.....	140
5 IRIS.....	141
Overview	141
IRIS Introduction.....	141
IRIS Summary	142
IRIS GUI	142

New Project.....	143
Creating a New Project.....	143
Project System Settings	144
Sites and Design Groups	145
Sites and Design Groups	145
Creating New Sites	146
Creating Design Groups.....	147
Associating Devices to Design Groups	148
Adding Network Devices	149
Catalog of Devices.....	149
Device Type Properties.....	150
Configurable Switch Slots	151
Transceivers	152
Transceiver Modules.....	152
Transceivers with Integrated Ports	153
Adding Mobility Controllers and APs.....	154
Multiple Devices (Multiplier)	155
Connecting Devices and Sites.....	156
Connecting Devices within a Site	156
Connecting Devices in Different Sites	158
Device Errors	159
IRIS BOM	160
Creating a BOM	160
Site BOM	161
BOM Filters	161
Printing and Exporting the BOM	162
Knowledge Check	163
Lab Activity.....	164
Lab Overview	164
Lab Tasks.....	165
Lab Debrief	174
Summary.....	175
6 Visual RF.....	177
Overview	177
Visual RF Introduction.....	177
Visual RF Navigation	177
VisualRF Levels	178
Visual RF Overview.....	179

Visual RF Setup	180
Campus	180
Buildings	181
Floor plans	182
Floorplan Measurement	183
Floorplan Boundary and Regions	184
CAD Files	185
Planning	186
Planning APs	186
Adding and Removing APs	187
Recalculating APs	188
Knowledge Check	189
Lab Activity	190
Lab Overview	190
Lab Tasks	190
Lab Debrief	197
Summary	197
7 Aruba APs	199
Overview	199
APs	199
Purpose-Built Aruba's Range of Wireless Access Points	200
AP Deployments	200
AP Numbering Scheme	203
AP Categories	204
AP Summary	205
AP Portfolio	206
Indoor 802.11ax APs	207
505 and 504 Series 802.11ax APs	208
510 Series 802.11ax APs	208
530 Series 802.11ax APs	209
550 Series 802.11ax APs	210
Indoor 500 Series Summarization	211
Indoor 802.11ac Wave 1 and 2 APs	212
Indoor AP 300 Series: 802.11ac Wave 2	212
Indoor AP 200 Series: 802.11ac Wave 1	214
Desk and Wall Plate APs	215
AP Mounts, Antennas, and Accessories	216
Mounts for the 200 and 300 Series APs	216
Plastic AP Covers	217

Third-Party Mounts.....	218
303H/203H Mounting Options	219
303H/203H Stand	220
AP 555/530/510 mounts	221
IRIS and Mounting Brackets	222
External Antenna Options.....	222
IRIS and Antennas.....	223
AP Console Cables and Power	224
Wired to Wireless Bridging: Aruba 501 AP	225
AP and RF Planning Process.....	226
WLAN RF Planning Process	226
Selecting a Survey Type.....	228
Virtual RF Survey	228
Estimating the Number of APs.....	229
Knowledge Check	231
Lab Activity.....	233
Lab Overview	233
Lab Tasks.....	233
Lab Debrief	237
Summary.....	238
8 Outdoor APs	241
Overview	241
Outdoor APs.....	241
Outdoor/Rugged AP Operating Tolerances.....	241
Outdoor APs Specifications.....	243
AP 387 Point-to-Point Wireless Bridge	245
Industrial APs	247
Mounts and Antennas.....	248
Outdoor AP Mounts	248
AP 318 Mount Kits Indoor/Outdoor	249
IRIS and Mounting Kits	249
External Antennas.....	250
IRIS and Antennas.....	251
Knowledge Check	252
Lab Activity.....	253
Lab Overview	253
Lab Tasks.....	254
Lab Debrief	256
Summary.....	259

9	MM, MC, and VC	261
	Overview	261
	Mobility Controllers	261
	Aruba OS 8.X Architecture	261
	Aruba Controller 7000 Portfolio and the 9004	262
	Performance and Capacity: 7000 Series	264
	Aruba Controller 7200 Portfolio	265
	Performance and Capacity: 7200 Series	266
	Virtual Mobility Controller Portfolio	267
	Mobility Master Portfolio	268
	Clustering MCs	269
	MM and MC Licenses	270
	Types of Licenses	270
	License SKUs	271
	Standalone MC and Standalone VMC	275
	Calculating Licensing Requirements	276
	IRIS and Licensing	277
	Instant APs versus Campus APs	278
	IAP Clusters	278
	IAP or Controller	280
	Knowledge Check	281
	Lab Activity	283
	Lab Overview	283
	Lab Tasks	283
	Lab Debrief	286
	Summary	288
10	Wired Switches	289
	Overview	289
	Wired Architectures	289
	Two-Tier versus Three-Tier Topology	289
	ArubaOS Switches	290
	ArubaOS-CX Switches	291
	VSF and Backplane Stacking	293
	Differences between VSF versus Backplane Stacking	293
	ArubaOS Access Layer Switches	294
	ArubaOS-CX Switch Virtualization Solutions	295
	Dynamic Segmentation	297

ArubaOS Switches	297
2530 Series Switches	297
2540 Series Switches	299
2930F Series Switches	300
2930M Series Switches	301
3810M Series Switches	304
5400R Series Switches	306
ArubaOS Switch Capacity and Performance	308
ArubaOS-CX Switches.....	309
8400 Overview	309
8325 Switch Overview.....	311
8320 Switch Overview.....	312
ArubaOS-CX Switch Capabilities	313
6400 Series Switches	314
6300 Series Switches	318
Core and Aggregation	325
Recommended Two-Tier Core Switches	325
Recommended Three-Tier Core and Aggregation Switches	325
Product Migration Options.....	326
ArubaOS-CX Switching for the Enterprise	327
HPE OfficeConnect Products.....	328
HPE OfficeConnect Switches	329
HPE OfficeConnect APs	329
Knowledge Check	330
Lab Activity.....	331
Lab Overview	331
Lab Tasks.....	332
Lab Debrief	337
Summary.....	338
11 Car Dealership Project	339
Overview	339
Introduction to Car Dealership Project.....	339
Lab Activity.....	341
Lab Tasks.....	341
Lab Debrief	347
Summary.....	348

Practice Test HPE6-A66 Exam and Sample Questions	349
Overview.....	349
Exam Information.....	349
Ideal Candidates for This Exam.....	349
Exam Contents.....	349
Advice to Help You Take this Exam	350
HPE6-A66 Exam objectives.....	350
Exam Information.....	351
Practice Test Questions.....	351
Practice Test Answers.....	359
Appendix	365
Chapter 1: Overview of Aruba Solutions.....	365
Knowledge Check Answers.....	365
Lab Debrief Answers	365
Chapter 2: WLAN Fundamentals.....	365
Knowledge Check Answers.....	365
Lab Debrief Answers	366
Chapter 3: Information Gathering	367
Knowledge Check Answers.....	367
Lab Debrief Answers	367
Chapter 4: Racks and Cables.....	369
Knowledge Check Answers.....	369
Lab Debrief Answers	369
Chapter 5: IRIS	370
Knowledge Check Answers.....	370
Lab Debrief Answers	370
Chapter 6: VisualRF	371
Knowledge Check Answers.....	371
Lab Debrief Answers	371
Chapter 7: Indoor APs.....	371
Knowledge Check Answers.....	371
Lab Debrief Answers	371
Chapter 8: Outdoor APs.....	372
Knowledge Check Answers.....	372
Lab Debrief Answers	372
Chapter 9: MM, MC, and VC	372
Knowledge Check Answers.....	373
Lab Debrief Answers	373

Chapter 10: Wired Switches	374
Knowledge Check Answers	374
Lab Debrief Answers	374
Chapter 11: Car Dealership Project	375
Knowledge Check Answers	375
Lab Debrief Answers	375
Index.....	403

1 Overview of Aruba Solutions

EXAM OBJECTIVE

- ✓ Be familiar with the Aruba product line for network design.
-

Introduction

This chapter will be an introduction of the Aruba portfolio. You will be introduced the Aruba product lines of access points (APs), managed devices (MDs), and the wired switches. You will be introduced to the Aruba network features like the Mobility Controller (MC) firewall capabilities and Airmatch. Review the choices for management and see how activate assigns network devices. Network security is achieved with Clearpass and greatly enhanced with IntroSpect. Network analysis is enhanced with Network Insight. A great feature is location services.

The overview covers the following sections:

- **Product Introduction:** Product line and AP terminology
- **Wired and Wireless Network Devices:** Range of APs, Managed device portfolio, OS and CX switches, SD-Branch
- **Network Features:** Aruba firewall, AirMatch, Client Match, Multizone, and dynamic segmentation
- **Network Management:** AirWave and Central
- **Activate:** Activate functions
- **Network Security:** ClearPass and IntroSpect
- **Network Analysis:** NetInsight, User Insight, and Device Insight
- **Location Services:** Meridian Deployment
- **Lab Activity**

Product Introduction

Figure 1-1 provides an overview of the Aruba products and their specifications:

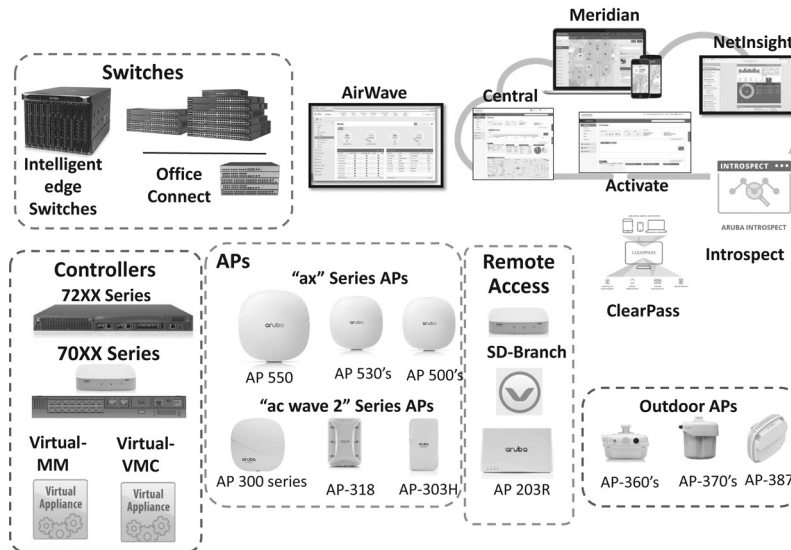


Figure 1-1. Product Line

The 300 series APs support 802.11ac wave 2 which have MU-MIMO (multiple user – multiple input/multiple output) features also BLE (Bluetooth Low Energy) integrated. The 318 is an indoor rugged AP for harsh indoor environments. The 303H is an excellent AP for home and hospitality services. The 203R is an 11ac AP good for small office or home. You can wall jack mount or use a stand for both the 303H and 203R APs.

The 500 series APs support 802.11ax and provide differentiated capabilities which include AI-powered Wi-Fi performance assurance, always-on connectivity, and WPA3-certified security. Green AP mode offers AI-powered energy savings of up to 70%. OFDMA and MU-MIMO efficiently and simultaneously service multiple clients to provide a good experience in high-density environments. It also supports IoT and leverages your Wi-Fi infrastructure to support Zigbee and Bluetooth devices and applications.

The compact, cost-effective remote access point 203R is software configurable to operate in either 1x1 dual radio mode, or 2x2 single radio mode.

Aruba has several options for remote access including SD-Branch, the VIA software client, and RAPs. SD-Branch works well for medium-sized offices that need better bandwidth management capabilities over the internet. VIA is an excellent application for road warriors. For home or small branch offices, the 203R and even the 303H configured as a RAP are good choices. VIA is an application for your laptop or smartphone that provides you secure access back to the network.

Aruba's outdoor APs are purpose-built to survive in the harshest outdoor/indoor environments. They can withstand exposure to extreme high and low temperatures, persistent moisture and precipitation, and are fully sealed to keep out airborne contaminants. All electrical interfaces include industrial strength surge protection.

All the controllers can execute the same functionality and you can configure, manage, and monitor them in exactly the same way. The difference between the controller models is in the network capacity and scalability. The smallest capacity controller is the 7005 which is capable of supporting 16 APs and 1,000 users. The 7240 controller is the largest capacity controller and can handle 2,048 APs and 32,000 users.

Intelligent edge switches combine a modern, fully programmable OS(AOS-CX) with carrier-grade hardware, leading performance, and incorporate the industry-first Network Analytics Engine (NAE) to monitor and troubleshoot network, system, application, and security-related issues easily.

Office Connect switches are a family of smart web-managed Gigabit switches with 10GbE uplinks for small business customers needing advanced high-performance connections. The series has no higher management services and is very simplistic and should not be used in enterprise networks.

AirWave is a management platform for monitoring and managing the networks. AirWave also has other capabilities such as reporting, Visual RF, and rogue detection and can monitor Aruba networks and other vendors. Aruba Central is a cloud-based management system.

ClearPass provides network control, access security, and advanced features such as captive portal, guest login, self-registration, as well as onboarding employee-owned devices.

The Meridian system gives you location awareness and advertising features. The new asset tracking solution can help you quickly locate business critical devices or inventory.

Aruba IntroSpect is a User and Entity Behavior Analytics (UEBA) solution that uses AI-based machine learning to spot changes in user behavior that often indicate inside attacks that have evaded perimeter defenses. Aruba NetInsight uses network analytics to diagnose issues before they are reported and optimizes performance to assure the best user experience possible.

Aruba SD-WAN provides flexible WAN management options for retail, hospitality, and healthcare organizations that are moving branch traffic off private WAN links in favor of direct Internet access.

Wired and Wireless Network Devices

This section introduces the range of APs, managed device portfolio, Aruba OS and CX switches, and SD-Branch.