LEARNING MADE EASY

# Alexa®

for dummies®

A Wiley Brand

Get your Alexa-enabled devices up and running

Turn your ordinary house into a smart home

Play music, check the weather, and do more with Alexa

**Paul McFedries**

Best-selling author of more than 95 books

# Alexa

# Alexa

by Paul McFedries

for dummies®
A Wiley Brand

## Alexa For Dummies®

Published by: **John Wiley & Sons, Inc.,** 111 River Street, Hoboken, NJ 07030-5774, www.wiley.com

Copyright © 2019 by John Wiley & Sons, Inc., Hoboken, New Jersey

Published simultaneously in Canada

No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, scanning or otherwise, except as permitted under Sections 107 or 108 of the 1976 United States Copyright Act, without the prior written permission of the Publisher. Requests to the Publisher for permission should be addressed to the Permissions Department, John Wiley & Sons, Inc., 111 River Street, Hoboken, NJ 07030, (201) 748-6011, fax (201) 748-6008, or online at http://www.wiley.com/go/permissions.

**Trademarks:** Wiley, For Dummies, the Dummies Man logo, Dummies.com, Making Everything Easier, and related trade dress are trademarks or registered trademarks of John Wiley & Sons, Inc. and may not be used without written permission. All other trademarks are the property of their respective owners. John Wiley & Sons, Inc. is not associated with any product or vendor mentioned in this book.

LIMIT OF LIABILITY/DISCLAIMER OF WARRANTY: THE PUBLISHER AND THE AUTHOR MAKE NO REPRESENTATIONS OR WARRANTIES WITH RESPECT TO THE ACCURACY OR COMPLETENESS OF THE CONTENTS OF THIS WORK AND SPECIFICALLY DISCLAIM ALL WARRANTIES, INCLUDING WITHOUT LIMITATION WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE. NO WARRANTY MAY BE CREATED OR EXTENDED BY SALES OR PROMOTIONAL MATERIALS. THE ADVICE AND STRATEGIES CONTAINED HEREIN MAY NOT BE SUITABLE FOR EVERY SITUATION. THIS WORK IS SOLD WITH THE UNDERSTANDING THAT THE PUBLISHER IS NOT ENGAGED IN RENDERING LEGAL, ACCOUNTING, OR OTHER PROFESSIONAL SERVICES. IF PROFESSIONAL ASSISTANCE IS REQUIRED, THE SERVICES OF A COMPETENT PROFESSIONAL PERSON SHOULD BE SOUGHT. NEITHER THE PUBLISHER NOR THE AUTHOR SHALL BE LIABLE FOR DAMAGES ARISING HEREFROM. THE FACT THAT AN ORGANIZATION OR WEBSITE IS REFERRED TO IN THIS WORK AS A CITATION AND/OR A POTENTIAL SOURCE OF FURTHER INFORMATION DOES NOT MEAN THAT THE AUTHOR OR THE PUBLISHER ENDORSES THE INFORMATION THE ORGANIZATION OR WEBSITE MAY PROVIDE OR RECOMMENDATIONS IT MAY MAKE. FURTHER, READERS SHOULD BE AWARE THAT INTERNET WEBSITES LISTED IN THIS WORK MAY HAVE CHANGED OR DISAPPEARED BETWEEN WHEN THIS WORK WAS WRITTEN AND WHEN IT IS READ.

For general information on our other products and services, please contact our Customer Care Department within the U.S. at 877-762-2974, outside the U.S. at 317-572-3993, or fax 317-572-4002. For technical support, please visit www.wiley.com/techsupport.

Wiley publishes in a variety of print and electronic formats and by print-on-demand. Some material included with standard print versions of this book may not be included in e-books or in print-on-demand. If this book refers to media such as a CD or DVD that is not included in the version you purchased, you may download this material at http://booksupport.wiley.com. For more information about Wiley products, visit www.wiley.com.

Library of Congress Control Number: 2018963863

ISBN 978-1-119-56586-4 (pbk); ISBN 978-1-119-56581-9 (ebk); ISBN 978-1-119-56579-6 (ebk)

Manufactured in the United States of America

10 9 8 7 6 5 4 3 2 1

# Contents at a Glance

**Introduction** . . . . . 1

**Part 1: Getting Started with Alexa** . . . . . 5

CHAPTER 1: Getting to Know Alexa . . . . . 7

CHAPTER 2: Setting Up Alexa and Your Devices . . . . . 21

CHAPTER 3: Learning Alexa Basics . . . . . 43

**Part 2: Having Fun with Alexa** . . . . . 57

CHAPTER 4: Playing Media . . . . . 59

CHAPTER 5: Communicating with Alexa . . . . . 83

CHAPTER 6: Using Alexa at Home . . . . . 101

**Part 3: Getting More out of Your Relationship with Alexa** . . . . . 131

CHAPTER 7: Asking Alexa Questions . . . . . 133

CHAPTER 8: Adding Skills to Alexa . . . . . 143

CHAPTER 9: Making Alexa Accessible . . . . . 159

**Part 4: Controlling Your Smart Home** . . . . . 173

CHAPTER 10: Setting Up Your Smart Home . . . . . 175

CHAPTER 11: Uncovering Some Smarter Smart-Home Techniques . . . . . 197

**Part 5: The Part of Tens** . . . . . 219

CHAPTER 12: Ten (Times Ten) Ridiculously Fun Alexa Tricks . . . . . 221

CHAPTER 13: Ten Things That Can Go Wrong with Alexa (And How to Fix Them) . . . . 229

CHAPTER 14: Ten Ways to Beef Up Alexa Security and Privacy . . . . . 245

**Index** . . . . . 263

# Table of Contents


INTRODUCTION . . . . . 1
About This Book . . . . . 1
Foolish Assumptions . . . . . 2
Icons Used in This Book . . . . . 2
Beyond the Book . . . . . 3
Where to Go from Here . . . . . 3

PART 1: GETTING STARTED WITH ALEXA . . . . . 5

CHAPTER 1: Getting to Know Alexa . . . . . 7
What Is This Alexa That Everyone's Talking About (Or, Really, To)? . . . . 7
Meet your new assistant . . . . . 8
Alexa's components . . . . . 9
How Alexa works . . . . . 11
Where Do You Get Alexa? . . . . . 12
Figuring Out Which Alexa Device You Need . . . . . 12
Checking out Amazon's Echo devices . . . . . 13
Choosing an Alexa device . . . . . 16
Learning What Alexa Can Do . . . . . 17
Playing media . . . . . 17
Communicating . . . . . 18
Shopping . . . . . 18
Getting help around the home . . . . . 18
Getting news and information . . . . . 18
Answering your questions . . . . . 18
Accessing skills . . . . . 19
Automating your home . . . . . 19
Having fun . . . . . 19

CHAPTER 2: Setting Up Alexa and Your Devices . . . . . 21
Installing the Alexa App . . . . . 21
Signing in to your Amazon account . . . . . 22
Taking a tour of the Alexa app . . . . . 25
Giving Alexa access to your device microphone . . . . . 26
Alexa Feng Shui: Positioning Your Alexa Device . . . . . 27
Adding Your Alexa Device . . . . . 27
Adding your Echo device . . . . . 28
Adding a third-party Alexa device . . . . . 32
Personalizing Your Alexa Device . . . . . 33
Creating a voice profile . . . . . 33
Giving the device a fun name . . . . . 34

Setting the device location . . . . . 34
Setting the device time zone . . . . . 35
Changing the device language . . . . . 36
Changing the measurement units . . . . . 36
Changing the background image if your device has a screen . . . . 37
Connecting External Speakers to Your Alexa Device . . . . . 37
Connecting speakers or headphones using a cable . . . . . 38
Connecting speakers or headphones via Bluetooth . . . . . 39
Disconnecting paired Bluetooth speakers or headphones . . . . . 40

CHAPTER 3: **Learning Alexa Basics** . . . . . 43
Getting to Know Your Echo . . . . . 43
Taking a closeup look at the far-field microphone . . . . . 44
Pushing the Echo's buttons . . . . . 45
Getting feedback from Alexa . . . . . 46
Operating the Echo touchscreen . . . . . 47
Getting to Know Alexa . . . . . 48
Getting Alexa's attention . . . . . 48
Keeping Alexa's attention . . . . . 49
Ending the conversation . . . . . 50
Enabling Brief mode . . . . . 50
Some Useful Alexa Commands . . . . . 51
Everyday-info commands . . . . . 51
Information requests . . . . . 52
Audio commands . . . . . 52
Video commands . . . . . 53
Alarm and timer commands . . . . . 53
Calendar, reminder, and list commands . . . . . 54
Communication commands . . . . . 54
Shopping commands . . . . . 55
Smart-home commands . . . . . 55

**PART 2: HAVING FUN WITH ALEXA** . . . . . 57

CHAPTER 4: **Playing Media** . . . . . 59
Listening to Music on Alexa . . . . . 60
Playing music through Alexa . . . . . 60
Linking to a music provider . . . . . 60
Setting up a default music provider . . . . . 61
Voice commands for controlling music . . . . . 63
Accessing Alexa via the Amazon Music app . . . . . 68
Playing third-party music through Alexa . . . . . 69
Adjusting music quality . . . . . 70

Listening to Other Audio Sources on Alexa . . . . . 71
Tuning in to a radio station . . . . . 71
Listening to a podcast . . . . . 74
Hearing an audiobook . . . . . 75
Having a Kindle book read out loud . . . . . 77
Streaming Mobile Device Audio through Alexa . . . . . 78
Watching Video on Alexa . . . . . 79
Watching a movie trailer . . . . . 80
Locating and playing web videos . . . . . 80
Watching Amazon's Prime Video . . . . . 81
Taking Photos with Alexa . . . . . 81

CHAPTER 5: **Communicating with Alexa** . . . . . 83
Managing Your Alexa Contacts List . . . . . 84
Giving Alexa access to your contacts . . . . . 84
Giving a contact a nickname . . . . . 85
Editing contacts . . . . . 86
Blocking a contact . . . . . 86
Managing your profile and settings . . . . . 86
Exchanging Text Messages . . . . . 87
Sending a text using voice commands . . . . . 87
Sending a text using the Alexa app . . . . . 88
Receiving a text message . . . . . 88
Making Voice or Video Calls . . . . . 89
Making voice calls with voice commands . . . . . 90
Making voice calls using the Alexa app . . . . . 92
Making video calls with voice commands . . . . . 93
Making video calls using the Alexa app . . . . . 93
Connecting Alexa to your landline with an Echo Connect . . . . . 94
Answering an incoming Alexa-to-Alexa call . . . . . 94
Ending a call . . . . . 95
Dropping In on Other Alexa Users . . . . . 96
Letting folks drop in on you . . . . . 96
Dropping in on someone using voice commands . . . . . 97
Dropping in on someone using the Alexa app . . . . . 98
Configuring global Drop In settings for your Alexa device . . . . . 98
Using Your Alexa Device as an Intercom . . . . . 100

CHAPTER 6: **Using Alexa at Home** . . . . . 101
A Quick Word about Household Profiles . . . . . 101
Shopping with Alexa . . . . . 102
Enabling voice purchases . . . . . 102
Getting product recommendations . . . . . 103
Placing an order . . . . . 103

Reordering an item . . . . . 104
Ordering multiple items . . . . . 104
Setting up a Voice Code for purchases . . . . . 104
Check your delivery status . . . . . 105
Getting delivery notifications . . . . . 106
Making a donation . . . . . 107
Creating Lists . . . . . 107
Creating and managing lists . . . . . 109
Adding and managing list items . . . . . 111
Getting the Information You Need . . . . . 112
Getting the weather forecast . . . . . 113
Checking traffic . . . . . 113
Hearing the latest news with the Flash Briefing . . . . . 114
Configuring Alexa's sports update . . . . . 116
Letting Alexa Manage Your Calendar . . . . . 117
Linking your calendar to Alexa . . . . . 118
Setting the default calendar . . . . . 119
Unlinking a calendar . . . . . 119
Managing calendar events . . . . . 119
Setting Alexa Alerts . . . . . 121
Getting Alexa to remind you of something . . . . . 121
Setting an alarm . . . . . 124
Running a timer . . . . . 125
Customizing your alarm sounds . . . . . 127
Putting Alexa in Do Not Disturb Mode . . . . . 128

PART 3: GETTING MORE OUT OF YOUR RELATIONSHIP WITH ALEXA . . . . . 131

CHAPTER 7: Asking Alexa Questions . . . . . 133
Searching for Nearby Places . . . . . 134
Asking for Financial Info . . . . . 134
Getting Symptoms and Other Medical Facts . . . . . 135
Asking Alexa to Do the Math . . . . . 135
Converting Units . . . . . 136
Getting Science Answers . . . . . 137
Quizzing Alexa about the Culture . . . . . 138
Bugging Alexa about Books . . . . . 138
Asking Linguistic Questions . . . . . 139
Asking Questions about Companies . . . . . 140
Asking about Dates and Times . . . . . 140
For Everything Else: Querying Wikipedia . . . . . 141

CHAPTER 8: **Adding Skills to Alexa** . . . . . 143
Understanding What a Skill Is . . . . . 143
Checking Out Amazon's Alexa Skills Department . . . . . 144
Enabling a Skill . . . . . 147
Enabling a skill with a voice command . . . . . 147
Enabling a skill using the Alexa app . . . . . 148
Working with Skills . . . . . 149
Invoking a skill . . . . . 149
Viewing your enabled skills . . . . . 150
Changing skill settings . . . . . 151
Disabling a skill . . . . . 152
Thirty Cool Alexa Skills to Try . . . . . 153
Building Your Own Skill . . . . . 155

CHAPTER 9: **Making Alexa Accessible** . . . . . 159
Controlling Alexa If You Have a Speech Impairment . . . . . 159
Making Alexa more speech accessible . . . . . 160
Installing a text-to-speech app . . . . . 160
Using Tap to Alexa . . . . . 160
Texting without speech . . . . . 162
Checking Out Alexa's Features for the Hearing Impaired . . . . . 163
Making Alexa more hearing accessible . . . . . 163
Enabling Closed Captioning . . . . . 165
Enabling Alexa Captioning . . . . . 165
Enabling Alexa's Features for the Vision Impaired . . . . . 166
Making Alexa more vision accessible . . . . . 166
Navigating with VoiceView . . . . . 168
Zooming in with Screen Magnifier . . . . . 170

**PART 4: CONTROLLING YOUR SMART HOME** . . . . . 173

CHAPTER 10: **Setting Up Your Smart Home** . . . . . 175
What's So Smart about a Smart Home? . . . . . 176
Working with smart-home devices . . . . . 177
Understanding smart-home connections . . . . . 178
How does Alexa fit in? . . . . . 179
Do you need a smart-home hub? . . . . . 179
Setting Up Your Smart-Home Devices . . . . . 180
Installing a Wi-Fi smart-home device . . . . . 180
Understanding Wi-Fi Simple Setup . . . . . 182
Discovering smart-home devices using an Alexa skill . . . . . 182
Discovering Zigbee smart-home devices . . . . . 184

Managing Smart-Home Devices . . . . . 185
Viewing your smart-home devices . . . . . 185
Renaming a smart-home device . . . . . 187
Changing the device type . . . . . 188
Disabling or deleting a smart-home device . . . . . 189
Working with Smart-Home Devices . . . . . 189
Controlling a smart-home device . . . . . 189
Working with device scenes . . . . . 190
Turning smart plugs on and off . . . . . 192
Working with smart lights . . . . . 192
Controlling smart thermostats . . . . . 193
Keeping an eye on things with smart cameras . . . . . 194
Other types of smart-home gear . . . . . 195

CHAPTER 11: **Uncovering Some Smarter Smart-Home Techniques** . . . . . 197

Creating Device Groups . . . . . 198
Creating a smart-home group . . . . . 198
Controlling a smart-home group . . . . . 200
Managing a smart-home group . . . . . 201
Alexa in Stereo: Working with Speaker Sets . . . . . 202
Creating a speaker set . . . . . 203
Playing music through a speaker set . . . . . 205
Streaming Music to Multiple Rooms . . . . . 207
Setting up multi-room music . . . . . 208
Playing multi-room music . . . . . 209
Fixing multi-room music sync problems . . . . . 210
Automating Alexa with Routines . . . . . 211
Understanding routine actions . . . . . 212
Creating a routine . . . . . 212
Running a routine . . . . . 214
Working with IFTTT Applets . . . . . 215
Connecting your IFTTT and Amazon accounts . . . . . 216
Enabling an IFTTT applet . . . . . 216
Checking out some Alexa applets . . . . . 218

**PART 5: THE PART OF TENS** . . . . . 219

CHAPTER 12: **Ten (Times Ten) Ridiculously Fun Alexa Tricks** . . . . 221

Ten Ways to Ask Alexa to Tell a Joke . . . . . 222
Ten Alexa Wordplay Tricks . . . . . 222
Ten Ways to Get Alexa to Sing . . . . . 223
Ten Oddball Things to Ask Alexa to Do . . . . . 224
Ten Funny Questions to Ask Alexa . . . . . 224

Ten Ways to Get Alexa to Tell a Story . . . . . 225
Ten Ways to Get Personal with Alexa . . . . . 226
Ten Movie Easter Eggs . . . . . 226
Ten TV Easter Eggs . . . . . 227
Ten Music Easter Eggs . . . . . 228

CHAPTER 13: **Ten Things That Can Go Wrong with Alexa (And How to Fix Them)** . . . . . 229

Troubleshooting 101 . . . . . 230
Restarting your Echo . . . . . 230
Updating your Echo . . . . . 230
Resetting your Echo . . . . . 231
Alexa or Your Echo Device is Unresponsive . . . . . 232
Your Echo Device Isn't Using the Latest Software . . . . . 233
You Can't Connect to Your Wi-Fi Network . . . . . 234
You're Having Trouble Streaming Media . . . . . 236
You're Having Trouble Connecting a Bluetooth Device . . . . . 237
You don't see a Bluetooth device . . . . . 237
You can't pair with a Bluetooth device . . . . . 238
You Ordered Something Accidentally . . . . . 238
Alexa Doesn't Understand Your Commands . . . . . 240
You're Having Trouble Making Calls . . . . . 241
You Changed Your Wi-Fi Network Password . . . . . 242
A Smart-Home Device Doesn't Work Properly . . . . . 243

CHAPTER 14: **Ten Ways to Beef Up Alexa Security and Privacy** . . . . . 245

Make Sure Your Wi-Fi Network Is Locked Up Tight . . . . . 246
Change Alexa's Wake Word . . . . . 248
Stop Alexa from Listening (And Watching) . . . . . 250
Trash Sensitive Alexa Recordings . . . . . 250
Configure Alexa Not to Use Your Personal Data . . . . . 252
Shut Down Alexa's Communications . . . . . 254
Turn communications off . . . . . 254
Revoke access to your contacts . . . . . 255
Secure Your Amazon Account . . . . . 255
Give your Amazon account a bulletproof password . . . . . 256
Turn on Amazon's Two-Step Verification . . . . . 257
Delete Your Saved Wi-Fi Passwords . . . . . 258
Revoke a Skill's Permissions . . . . . 260
Deregister Your Alexa Device . . . . . 260

**INDEX** . . . . . 263

# Introduction

Okay, I know just what you're thinking: Why, oh, why would someone write a book about Alexa, Amazon's famous and wildly popular virtual assistant? After all, don't you just plug in an Echo or any of the umpteen other devices that come with Alexa built in; say, "Alexa"; and then ask a question or give a command? What else does a person need to know, for pity's sake? I'm surprised Alexa requires even *three* pages of explanation, so how can this book have hundreds?

First, wow, you ask a lot of questions. Second, well, you'd be surprised. Sure, Alexa's basics are readily understood. That's part of the beauty of Alexa and the devices that run it: The initial learning curve is pretty much a horizontal line.

Ah, but Alexa is *way* deeper and more powerful than those out-of-the-box basics would indicate. You've got a serious piece of software at your beck and call. (Well, your call, anyway; Alexa does not yet respond to becks.) I'm talking high-end artificial intelligence (AI), world-class voice recognition, and tons of third-party extensions. All that adds up to an amazingly sophisticated app that contains hidden depths just waiting for you to find them.

## About This Book

*Alexa For Dummies* takes you on a complete tour of Alexa's capabilities, tools, settings, and skills. You'll even see that Alexa has a hidden whimsical side that it's just dying to show. In the end, you'll learn everything you need to know to get the most out of your Alexa investment. Best of all, you'll have a ton of fun as you go along.

This book boasts 14 chapters, but just because they appear sequentially, that doesn't mean you have to read them that way. Use the table of contents or index to find the information you need — and dip into and out of the book when you have a question about Alexa.

If your time is very limited (or you're just aching to get tonight's binge-watching started), you can also ignore anything marked by the Technical Stuff icon or the information in sidebars (the gray-shaded boxes). Yes, these tidbits are fascinating,

but they aren't critical to the subject at hand, so you won't miss anything critical by skipping them.

Within this book, you may note that some web addresses break across two lines of text. If you're reading this book in print and want to visit one of these web pages, just key in the web address exactly as it's noted in the text, pretending as though the line break doesn't exist. If you're reading this as an e-book, you've got it easy — just click the web address to be taken directly to the web page.

Finally, throughout this book, when you see an italicized word inside square brackets, that's a placeholder. That is, you replace the italicized word with something else specific to your command. For example, the placeholder [*title*] means you replace *title* with the actual title of something (such as a song or an album).

# Foolish Assumptions

This book is for people who are new (or relatively new) to using the Alexa voice-activated virtual assistant. Therefore, I do *not* assume that you're an Alexa expert, an Alexa maven, or an Alexa aficionado. However, I do assume the following:

- You know how to plug in and connect devices.
- You have a running Wi-Fi network with an Internet connection.
- You know the password for your Wi-Fi network.
- You have either an iOS or an Android mobile device (that is, a smartphone or tablet).
- You know how to install and operate apps on your mobile device.

# Icons Used in This Book

Like other books in the *For Dummies* series, this book uses icons, or little pictures in the margin, to flag things that don't quite fit into the flow of the chapter discussion. Here are the icons that I use:

This icon marks text that contains some things that useful or important enough that you'd do well to store the text somewhere safe in your memory for later recall.

TECHNICAL STUFF

This icon marks text that contains some for-nerds-only technical details or explanations that you're free to skip.

TIP

This icon marks shortcuts or easier ways to do things, which I hope will make your life — or, at least, the Alexa portion of your life — more efficient.

WARNING

This icon marks text that contains a friendly but unusually insistent reminder to avoid doing something. You have been warned.

# Beyond the Book

In addition to what you're reading right now, this product also comes with a free access-anywhere Cheat Sheet that includes ten must-do setup tasks, 50 of Alexa's most useful voice commands, and 50 of Alexa's most fun voice commands. To get this Cheat Sheet, go to `www.dummies.com` and type **Alexa For Dummies Cheat Sheet** in the Search box.

# Where to Go from Here

If you've had Alexa for a while and you're familiar with the basics, you can probably get away with skipping the first three chapters and then diving in to any part of the book that tickles your curiosity bone. (Or, why not take advantage of your handy personal assistant? Just say, "Alexa, give me a number between 4 and 14.") That works because the chapters all present their Alexa know-how in readily digestible, bite-size tidbits, so feel free to graze your way through the book.

However, if you and Alexa haven't met yet — particularly if you're not sure what Alexa even *does* — this book has got you covered. To get your relationship with Alexa off to a fine start, I highly recommend reading the book's first three chapters to get some of the basics down cold. From there, you can branch out anywhere you like, safe in the knowledge that you've got some survival skills to fall back on!

# 1 Getting Started with Alexa

**IN THIS PART . . .**

Find out what Alexa is, what Alexa can do, and what hardware you need to use Alexa.

Welcome Alexa into your home by learning where to put your Alexa device, getting your device on your network, and customizing Alexa.

Discover some crucial basics about your Echo device and Alexa itself, as well as some important Alexa commands.

IN THIS CHAPTER

- Learning about Alexa
- Seeing how Alexa works
- Taking a look at Amazon's Echo devices
- Figuring out which Alexa device is best for you
- Reviewing what you can do with Alexa

# Chapter 1
# Getting to Know Alexa

It never hurts to "begin at the beginning," as the King said gravely in *Alice's Adventures in Wonderland.* (Whether, as the King also suggested, you "go on till you come to the end: then stop" is up to you.) In this chapter, the "beginning" consists of some useful, perhaps even interesting, background about Alexa, including an answer to what might be the most important question of all: Just what *is* Alexa, anyway? (Or should that be just *who* is Alexa?)

To get your Alexa education off to a solid start, this chapter takes you on an exploratory tour of the Alexa landscape. This is big-picture stuff where you learn not only what Alexa is, but also how you get Alexa and which Alexa-friendly device you need. After taking you through these *what, where,* and *how* fundamentals, you also investigate what is likely the *second* most important question: *Why* would people even need Alexa in their lives?

## What Is This Alexa That Everyone's Talking About (Or, Really, To)?

Okay, let me get right to it: Amazon Alexa is a *voice service,* a cloud-based software program that acts as a voice-controlled virtual personal assistant. In a nutshell, you use your voice to ask Alexa a question or give Alexa a command, and it

dutifully answers you (assuming an answer exists) or carries out your request (assuming your request is possible). The key here is that Alexa responds to *voice* commands.

In the movie *Star Trek IV: Voyage Home,* the crew of the Starship *Enterprise* travel back in time 300 years to 1986. In a memorable scene, Scotty, the ship's chief engineer, goes up to a mid-'80s-era PC and says, "Computer!" When the machine doesn't respond, he says, "Computer!" once again. He's then handed a mouse and, thinking it's a microphone, says, "Hello, computer!" Apparently, in the year 2286, interacting with a computer using anything but voice commands is unthinkable.

We're a long way from the voice-only future envisioned in *Star Trek* (not to mention countless other sci-fi stories; remember voice-controlled HAL in *2001: A Space Odyssey?*). However, as we sit here near the end of the second decade of the 21st century, you can feel the computer-interaction landscape starting to shift. After some 40 years of folks sitting in front of their PCs, typing away in near-total silence (with only the occasional wail of exasperation or groan of impatience to break the quiet), users are starting to find their voices.

True, operating systems such as Windows and macOS have had voice-control tools for many years, but they were obscure and unreliable, so they were used by only a handful of people. Voice control's bid for the mainstream didn't get serious until Apple purchased the Siri speech-recognition app in 2010 and released it with iOS 5 a year later. Suddenly, it became "cool" to interact with a computer (at least one in the shape of a smartphone) with voice commands.

Since then, numerous voice-control tools have been released, including Google's Assistant, Microsoft's Cortana, and various voice-command features found in modern cars. But it was the release of the full version of Amazon's Alexa in 2015 that really got the voice ball rolling. Amazon doesn't release sales figures, but most industry know-it-alls agree that tens of millions of Alexa devices have been sold.

## Meet your new assistant

Why is Alexa so popular? There are lots of reasons, but the one that really matters is that Alexa is (or tries hard to be) a "personal assistant." Older voice-command tools were geared toward using a computer: running programs, pulling down menus, accessing settings, and so on. Alexa doesn't do any of that. Instead, it's focused on doing things for you in your real life, including (but by no means limited to) the following:

- Playing music, podcasts, or audiobooks
- Setting timers and alarms

- Telling you the latest news, weather, or traffic
- Creating to-do lists and shopping lists
- Buying something from Amazon
- Controlling home-automation devices such as lights and thermostats
- Telling jokes

That last one may be a bit surprising, but perhaps the second-most important reason behind's Alexa's success is that it comes with whimsy as a feature. Alexa, as I hope to show in this book, is both useful *and* fun.

REMEMBER

Older and lesser voice-controlled systems recognize only a limited set of commands that have to be enunciated precisely, so using such systems feels stilted and slow. Alexa, by contrast, is an example of a new breed of voice-aware systems that use *conversational artificial intelligence.* That sounds pretty geeky, but it really means that Alexa isn't meant to be controlled so much as *interacted* with. With Alexa, you ask your questions and give your commands using natural language and your normal voice. Does it work perfectly every time? Nope, we're not in *Star Trek* territory just yet, but I think you'll be pleasantly surprised at just how well it *does* work.

## Alexa's components

Throughout this book I talk about "Alexa" as though it's a single object, but Alexa is really a large collection of objects that, together, create the full, seamless Alexa experience. For the purposes of this book, Alexa consists of the following four components:

- **Name recognition:** Although when you interact with Alexa it seems as though the device understands what you say, the only speech your Alexa device actually recognizes is the word *Alexa,* which Amazon calls the *wake word.* That is, it's the word that lets Alexa know it should wake up and start listening for an incoming command or question. (In case you're wondering: Yep, you can change the wake word to something else. I show you how to do that in Chapter 14.)
- **Speech recording:** Your Alexa device has a built-in microphone that captures the questions, commands, requests, and other utterances that you direct to the device. There's a simple computer inside that records what you say and then sends the recording over the Internet to the Alexa Voice Service (discussed next). This part of Alexa is sometimes called the *voice user interface* (VUI).

- **Alexa Voice Service (AVS):** Here's where the real Alexa magic happens. This part of Alexa resides in Amazon's cloud. AVS takes the recording that contains your voice command and uses some fancy-schmancy *speech recognition* to tease out the actual words you spoke. AVS then uses *natural-language processing* to analyze the meaning of your command, from which it produces a result.
- **Speech synthesis:** This component takes the results provided by AVS and renders them as speech, which is stored in an audio file. That file is returned and played through the Alexa device's built-in or connected speakers.

TECHNICAL STUFF

## WHAT'S ALL THIS ABOUT A "CLOUD"?

I've mentioned the term *cloud* a couple of times now, so let me take a few minutes of your precious time to explain what I'm talking about. In many network diagrams, the designer is most interested in the devices that connect to the network, not the network itself. After all, the details of what happens inside the network to shunt signals from source to destination are often extremely complex and convoluted, so all that minutiae would serve only to detract from the network diagram's larger message of showing which devices can connect to the network, how they connect, and their network entry and exit points.

When the designer of a network flowchart wants to show the network but not any of its details, he or she almost always abstracts the network by displaying it as a cloud symbol. (It is, if you will, the "yadda yadda yadda" of network diagrams.) At first the cloud symbol represented the workings of a single network, but in recent years it has come to represent the Internet (the network of networks).

So far, so good. Earlier in this millennium, some folks had the bright idea that instead of storing files on local computers, you could store them on a server connected to the Internet, which meant that anyone with the right credentials could access the files from anywhere in the world. Eventually, folks started storing programs on Internet servers, too, and starting telling anyone who'd listen that these files and applications resided "in the cloud" (meaning on a server — or, more typically, a large collection of servers that reside in a special building called a *data center* — accessible via the Internet).

One such application is the Alexa Voice Service, which resides inside Amazon's cloud service called Amazon Web Services (AWS). So, that's why I say that Alexa is a "cloud-based voice service." That's also why, as I mention later in this chapter, you need an Internet connection to use Alexa: It requires that connection to access its cloud component.

## How Alexa works

Given the various Alexa components that I outline in the preceding section, here's the general procedure that happens when you interact with Alexa to get something done:

1. **You say "Alexa."**

   Your Alexa device wakes up, as indicated (in most cases) by the device's light ring turning blue (see Chapter 3 for more about the light ring). The device is now hanging on your every word.

2. **You state your business: a question, a command, or whatever.**

   The Alexa devices records what you say. When you're done, the device uses your Internet-connected Wi-Fi network to send the recording to AVS in Amazon's cloud.

WARNING

   It may seem like Alexa "lives" inside whatever device you have, but Alexa is very much an Internet-based service. That means if you don't have Internet access, you don't have Alexa access either.

3. **AVS uses its speech-recognition component to turn the recorded words into actual data that can be analyzed.**

4. **AVS uses its natural-language processing component to analyze the words in your command and then figure out exactly what you asked Alexa to do.**

   AVS doesn't analyze every single word you say. Instead, it's mostly looking for the telltale *keywords* that indicate what you've asked Alexa to provide. For example, if you said "What's the weather forecast for tomorrow?," all AVS needs are the words *weather, forecast,* and *tomorrow* to deliver the correct info.

5. **If AVS can't fulfill your request directly, it passes the request along to a third-party service (such as AccuWeather or Wikipedia), and then gathers the response.**

6. **AVS returns the response via the Internet to your Alexa device.**

   What AVS returns to your Alexa device depends on the result. If the result is just information for you, AVS converts the info to speech and stores the speech in an audio file that your Alexa device can play. If the result is a command (for example, to play a particular song), AVS passes that command back to the Alexa device.

7. **The Alexa device either uses its built-in or connected speaker to broadcast the result of your request or carries out your command.**

   If your Alexa device has a screen, you also see the result on the screen.

# Where Do You Get Alexa?

In most cases, Alexa is closely associated with hardware devices, and how close that association is depends on the device. There are three types of device to consider:

- **Devices that have Alexa built in:** As you may expect, Amazon offers a huge range of products that have Alexa inside, including the Echo, Echo Dot, Echo Plus, Echo Spot, Echo Show, Fire tablet, and Fire TV. But there's also a massive ecosystem of third-party devices that are Alexa-enabled, including select Windows PCs, sound systems, TVs, tablets, appliances, GPS units, and even several cars.
- **Devices that Alexa can control directly:** Many devices are Alexa-friendly, meaning that Alexa can connect to and control those devices directly using either a Bluetooth or Wi-Fi connection. For example, you can use Amazon's Echo Plus to connect to a smart-home device such as a thermostat, and then use Alexa on the Echo Plus to control the temperature. Similarly, you can use any Amazon Echo device to operate the AmazonBasics Microwave (yes, that's right: a microwave oven that you can control with your voice!).
- **Devices that Alexa can control indirectly:** Although as I write this some 20,000 devices fit into the preceding two categories, that still leaves a huge number of Alexa-ignorant devices. However, in some cases you can still have limited control over even these devices. For example, you can connect any Amazon Echo device to an Amazon Smart Plug, which you can turn on and off using Alexa. So, when you plug a non-Alexa device (such as a lamp) into the Smart Plug, you can use Alexa to turn that device on and off.

Notice that, at the start of this section, I said, "in most cases." What are the exceptions? As I talk about in Chapter 2, Amazon offers the Alexa app, which is a program that you install on your smartphone or tablet. You can use the app to connect with and manage smart-home devices, but if you just want the standard Alexa experience — that is, using voice commands to ask questions and make requests — then you can do all that directly from the app; no external hardware (such as the devices I ramble on about in the next section) is required.

# Figuring Out Which Alexa Device You Need

In the preceding section, I mention that, with the exception of using Alexa on your phone or tablet, you can't do the Alexa thing until you get a device that's Alexa-enabled. That sounds straightforward enough, but that illusion of simplicity is

shattered when you see the sheer number of devices that are available. And I'm not even talking about all the third-party Alexa devices that are out there. Amazon alone offers no less than a half-dozen different Alexa-enabled devices just in its Echo brand of smart speakers. How are you supposed to know which one to get?

# Checking out Amazon's Echo devices

To help you make the right Alexa decision, this section offers a quick look at what's available from Amazon's Echo brand.

## Echo

Echo (shown in Figure 1-1) is your garden-variety Echo smart speaker that's designed for larger rooms because it comes with two speakers: a 2.5-inch woofer and a 0.6-inch tweeter. It's fairly big — 3.4 inches in diameter and 5.8 inches high — so you may need to clear a spot for it.

**FIGURE 1-1:** Amazon's Echo smart speaker.

*Photograph courtesy of Amazon*

## Echo Dot

The Echo Dot (shown in Figure 1-2) is a smart speaker designed for smaller rooms because it comes with a single speaker and is quite a bit teensier overall than the Echo (about 3.9 inches in diameter and about 1.7 inches high). It's also half the price of the Echo, which is likely why it's Amazon's bestselling Alexa device.

**FIGURE 1-2:** Amazon's Echo Dot smart speaker.

*Photograph courtesy of Amazon*

## Echo Plus

The Echo Plus (shown in Figure 1-3) is a smart speaker just like the Echo, but it also includes a built-in home-automation hub, which enables you to connect and operate compatible smart-home devices (such as lights, thermostats, and security cameras) from a central location. The Echo Plus is the same size as the Echo, but its two speakers are slightly bigger — a 3-inch woofer and a 0.8-inch tweeter — for richer sound.

**FIGURE 1-3:** Amazon's Echo Plus smart speaker.

*Photograph courtesy of Amazon*

## Echo Spot

The Echo Spot (shown in Figure 1-4) is a smart speaker that's similar to the Echo Dot, except that it comes with a 2.5-inch screen that enables you to see the weather, news highlights, and song lyrics. The Echo Spot also has a built-in camera, so you can use it to make video calls to compatible devices. The Echo Spot comes with a single speaker and is 4.1 inches wide, 3.8 inches high, and 3.6 inches deep.

**FIGURE 1-4:** Amazon's Echo Spot smart speaker.

*Photograph courtesy of Amazon*

## Echo Show

The Echo Show (shown in Figure 1-5), like the Echo Spot, is a smart speaker that comes with a screen, but the Echo Show screen is big: just over 10 inches along the diagonal. That screen also supports high definition (HD) for great-looking video. The Echo Show also has a built-in 5-megapixel camera, so you can use it to make video calls to compatible devices. The Echo Show comes with two 2-inch speakers and is 9.7 inches wide, 6.9 inches high, and 4.2 inches deep.

## Echo Auto

The Echo Auto (shown in Figure 1-6) is designed to hang out with you in your car. It connects to the Internet via your smartphone. The Echo Auto doesn't have a built-in speaker, but you can use it to connect to your car's speakers via Bluetooth or by plugging in an audio cable (assuming your car supports either of these options). The Echo Auto is 3.3 inches wide and 1.9 inches deep.