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OS X El Capitan: Connectivity

Introduction



Course Description

The OS X El Capitan: Connectivity course describes how to configure OS X El Capitan to connect to networked devices.

This course is part of the ACMT 2016 curriculum and is used to prepare for the Mac Service Certification Exam (MAC-16A).



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OS X El Capitan: Connectivity

Overview

Lesson Objectives

After completing this course, you should be able to:

- Use System Preferences in OS X to successfully configure a wired or Wi-Fi connection to an existing network.
- Use tools in OS X to successfully pair a Bluetooth device to a Mac.
- Using System Preferences, configure OS X to securely share data over a network.
- Enable AirDrop in OS X and successfully share a file with another AirDrop-enabled Mac or iOS Device.
- Describe how to display the screen of a Mac on an AirPlay-enabled device.
- Use System Preferences to create network Locations.
- In a simulated environment, use AirDrop to transfer a file to another Mac.
- Correctly answer a set of knowledge-based questions about connectivity in OS X.

Audience



Service Technicians

Prerequisites



Successful completion of the Apple Service Fundamentals exam

Time Required



1 hour

You will need...



No additional materials or equipment are required

This course is designed for technicians who do not have immediate access to a Mac running OS X El Capitan. If you do have access to a Mac running OS X El Capitan, it is recommended that you use it while reviewing the course.



Your course is organized by chapters and pages. Chapters are sections you see on the side navigation. Pages are now found within a chapter. You can navigate pages by clicking the grey radio buttons at the bottom of a window.



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OS X El Capitan: Connectivity

Connect to a Network

Network connectivity is typically configured when OS X is initially setup or upgraded. It can also be configured by selecting an available network from the Wi-Fi menu, or plugging into an Ethernet connection.



Connection methods used to access the internet or a network include:

- An Internet connection from an Internet Service Provider (ISP).
- An existing work or office network.
- A Personal Hotspot with service provided by a cellular carrier.

These connections will typically require a user account name and password.



Read the following Apple Support articles:

- [HT201974: Manage the Wi-Fi connection on your Mac](#)
- [HT201735: Mac Basics: Connecting your Mac to the Internet](#)
- [PH21575: OS X El Capitan: Connect to the Internet](#)

You will be asked questions based on this content in the Quiz chapter or on the exam.



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OS X El Capitan: Connectivity

Locations

A location is a set of network preferences. Users of portable computers may frequently connect to the Internet or networks in different ways at different places. Locations store different sets of network preferences which can be named for the locations or situations in which they are used. Locations can be switched either from the Network pane of System Preferences or from the Apple menu.



Changing Network Locations





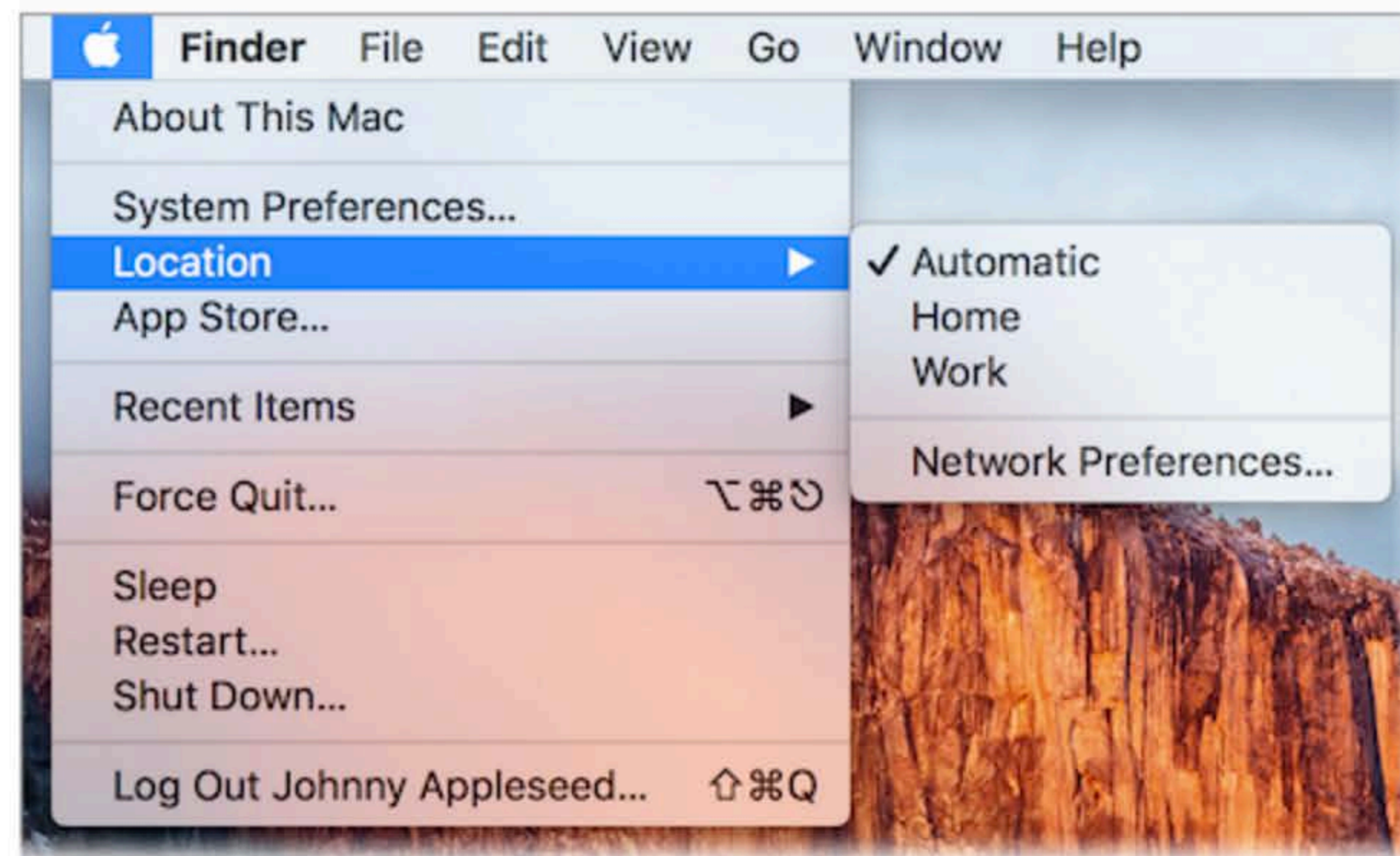
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OS X El Capitan: Connectivity

Locations

Apple Menu



Network Locations will only appear in the Apple menu when more than one location is configured in the Network pane of System Preferences.



Read Apple Support article, [HT202480: Using network locations \(Mac OS X v10.6 and later\)](https://support.apple.com/kb/HT202480). You will be asked questions based on this content in the Quiz chapter or on the exam.





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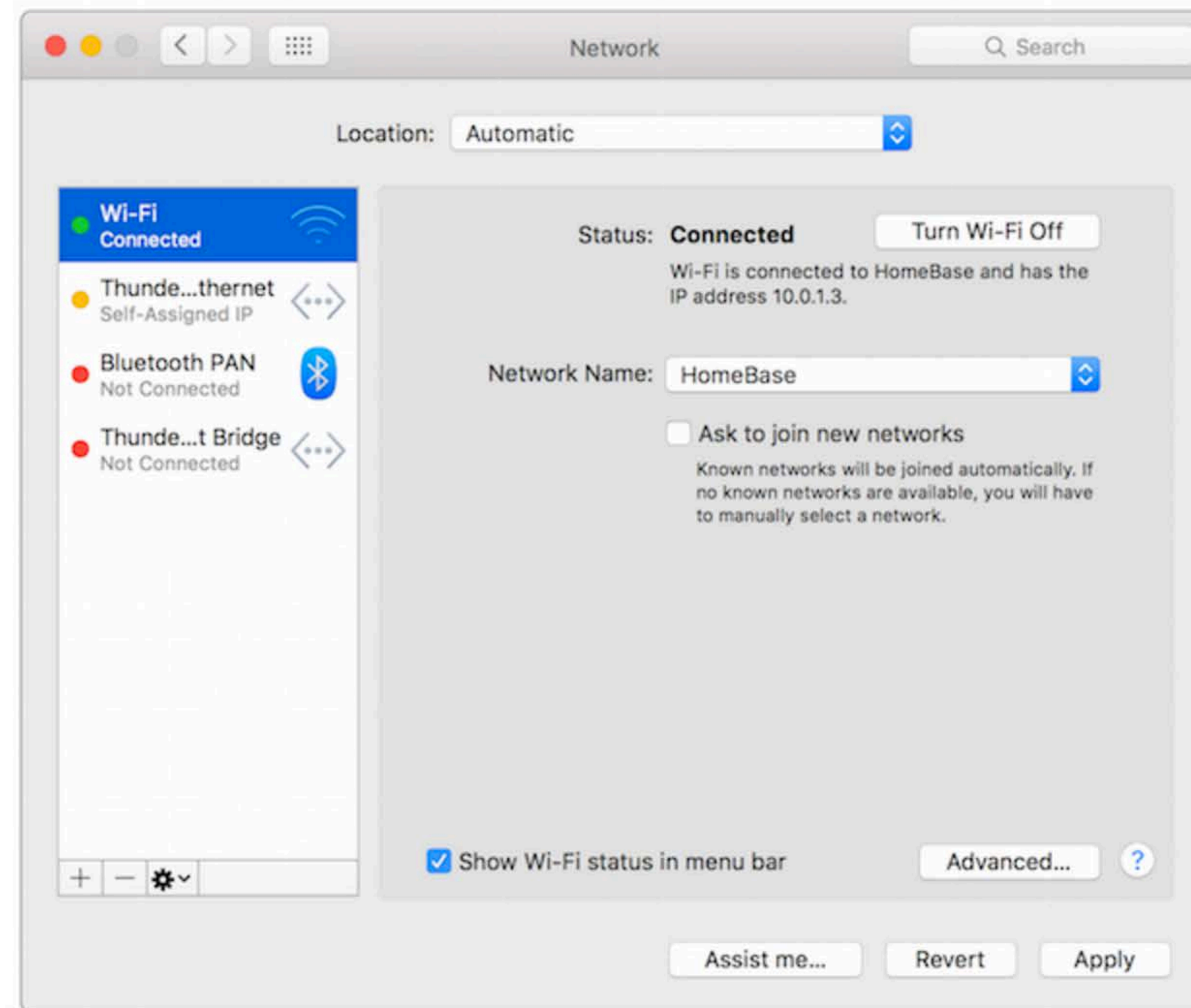
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OS X El Capitan: Connectivity

Locations

Automatic Location

By default, OS X has a location named Automatic, and all available network ports are set to active status. When the Automatic location is selected, OS X automatically searches all active network ports for a connection to the Internet.





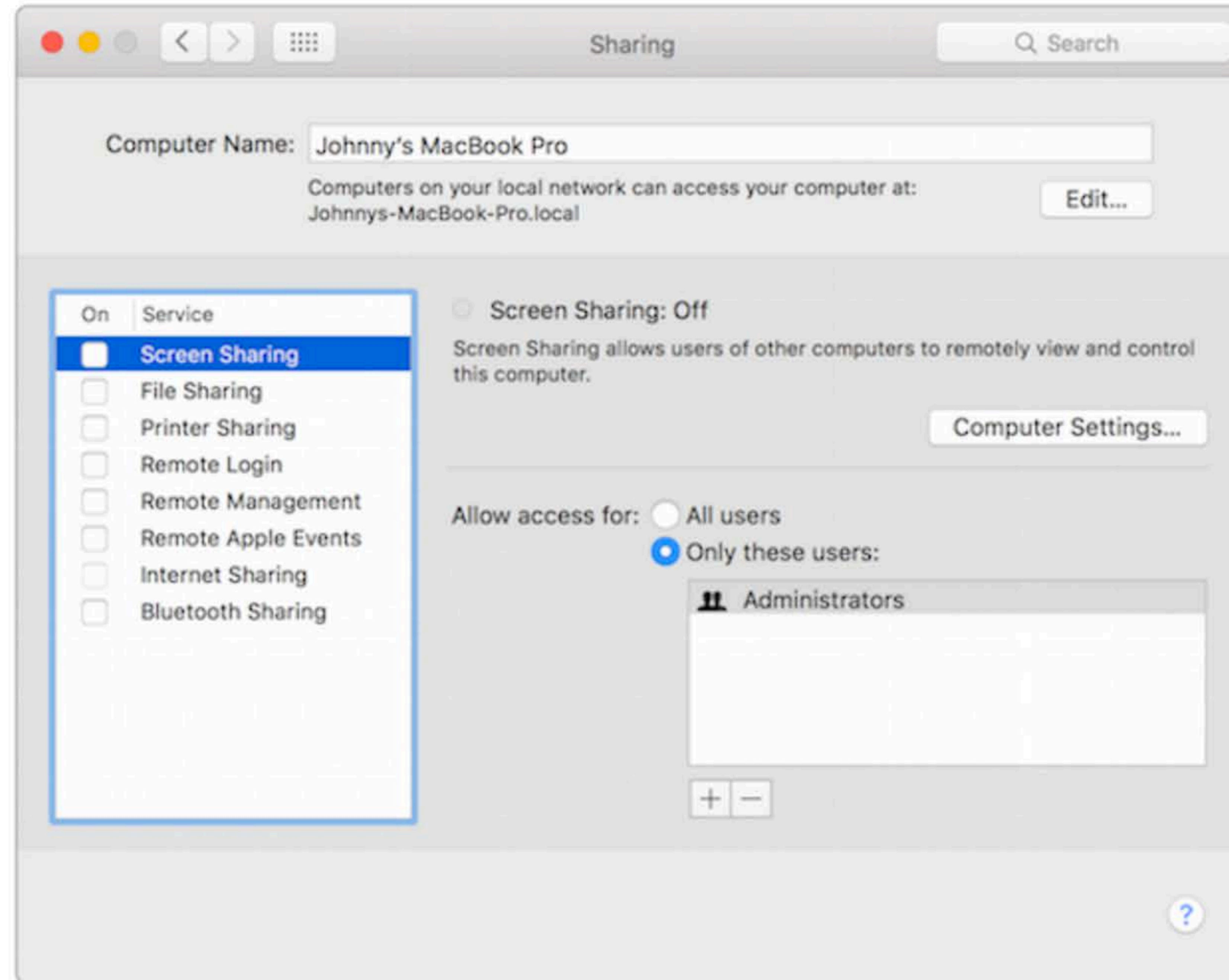
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OS X El Capitan: Connectivity

Sharing

The Sharing pane in System Preferences provides users with a way to share resources over the network. Check each box to enable a sharing service. Configure the service by selecting it from the list.





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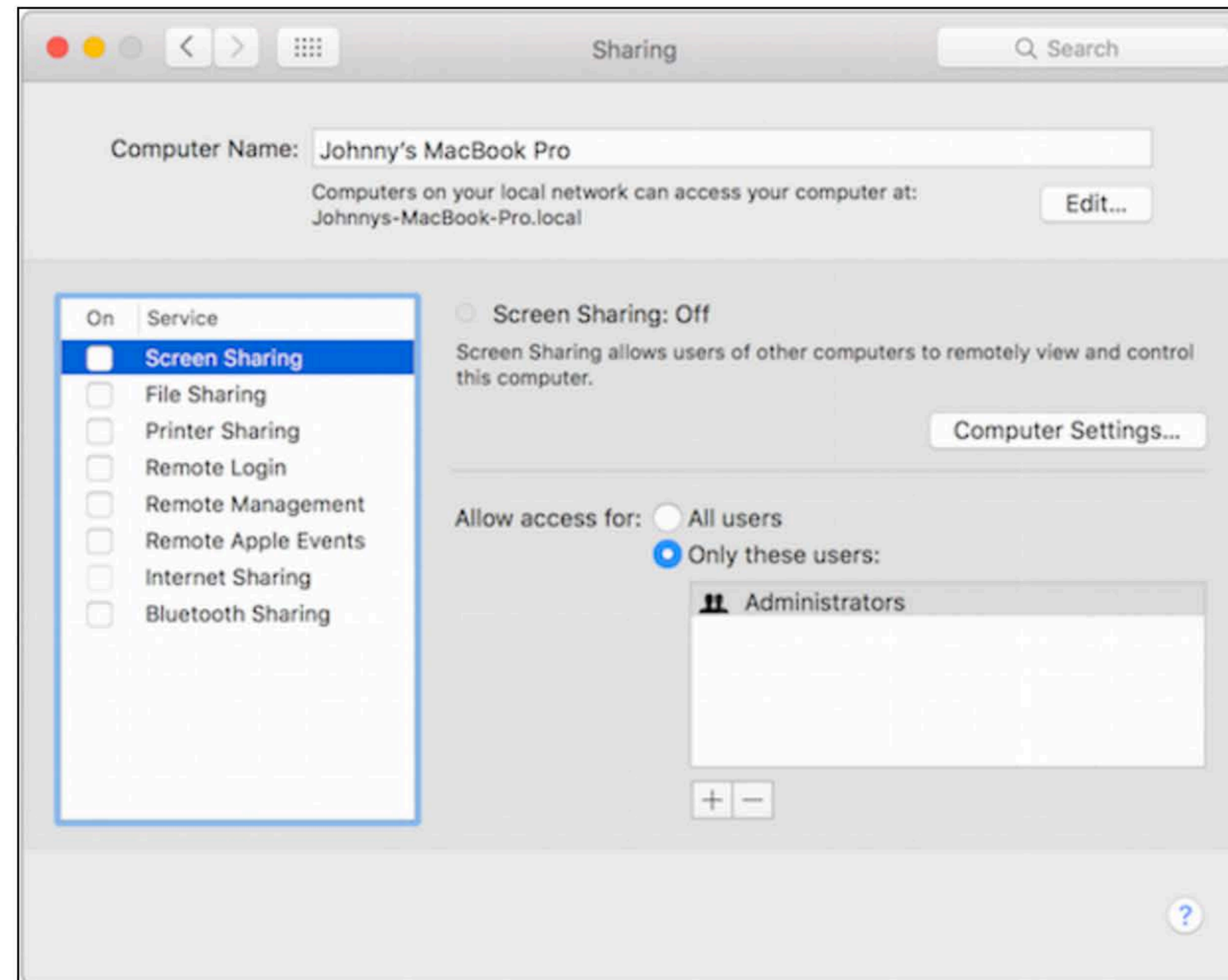
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OS X El Capitan: Connectivity

Sharing

In the simulation below, click on each of the services on the left to view the configuration options for each. Click the information (i) button on the lower right to see the hot spots.

1. Screen Sharing will enable another Mac on the network to display what is on this Mac's screen.
2. Click Edit.
3. Click Computer Settings.
4. Click File Sharing.





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OS X El Capitan: Connectivity

Sharing

When connecting from a Mac (OS X Mavericks or later) to another computer using file sharing, the Mac automatically tries to use the Service Message Block (SMB) protocol to communicate. If SMB is not available, OS X tries to connect using Apple File Protocol (AFP).



Open Ports

TCP/IP communications between a computer and other computers on the Internet pass through numbered logical ports on each computer. By default, the services in the Sharing pane of System Preferences are disabled. The TCP ports used for each service are opened as the service is enabled. Knowing which ports are open on a computer can help you assess the security of a system or troubleshoot connection problems. To identify open ports, use the Port Scan feature of Network Utility in System Information:

Apple Menu > About This Mac > System Report... > Window > Network Utility > Port Scan



Read the following Apple Support articles:

- [HT204445: How to connect with File Sharing on your Mac](#)
- [HT202944: TCP and UDP ports used by Apple software products.](#)

You will be asked questions based on this content in the Quiz chapter or on the exam.





OS X El Capitan: Connectivity

Bluetooth

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Bluetooth is a wireless technology for short-range connections between devices such as computers, headsets, keyboards, and mice.



Read Apple Support article, [HT201171: Wireless input devices: Bluetooth frequently asked questions](#). You will be asked questions based on this content in the Quiz chapter or on the exam.





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OS X El Capitan: Connectivity

Bluetooth

Pairing

Before a Bluetooth keyboard, mouse, trackpad, or audio device can be used with a Mac, it must be paired with the device.





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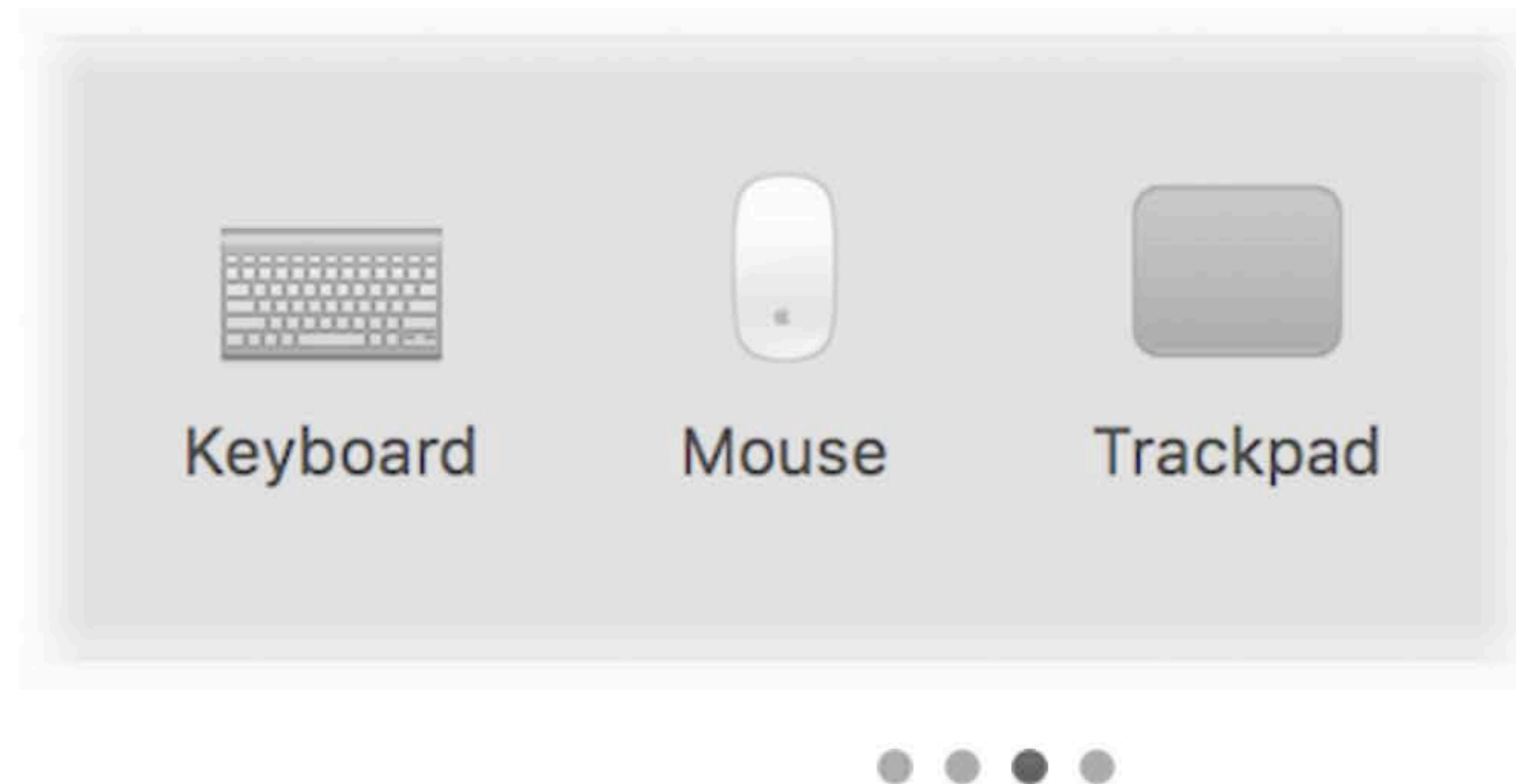
Bluetooth

System Preferences

To verify a Bluetooth Device Is Connected, open the Bluetooth pane of System Preferences. The Bluetooth devices paired with the computer will be listed along with the status of the devices (paired or connected), and whether or not Bluetooth power is on.

Bluetooth wireless keyboards, mice, and trackpads are setup using the respective System Preference panes, rather than the Bluetooth System Preference pane.

- Bluetooth keyboards use the Keyboard pane.
- Bluetooth mice use the Mouse pane.
- Bluetooth trackpads use the Trackpad pane.





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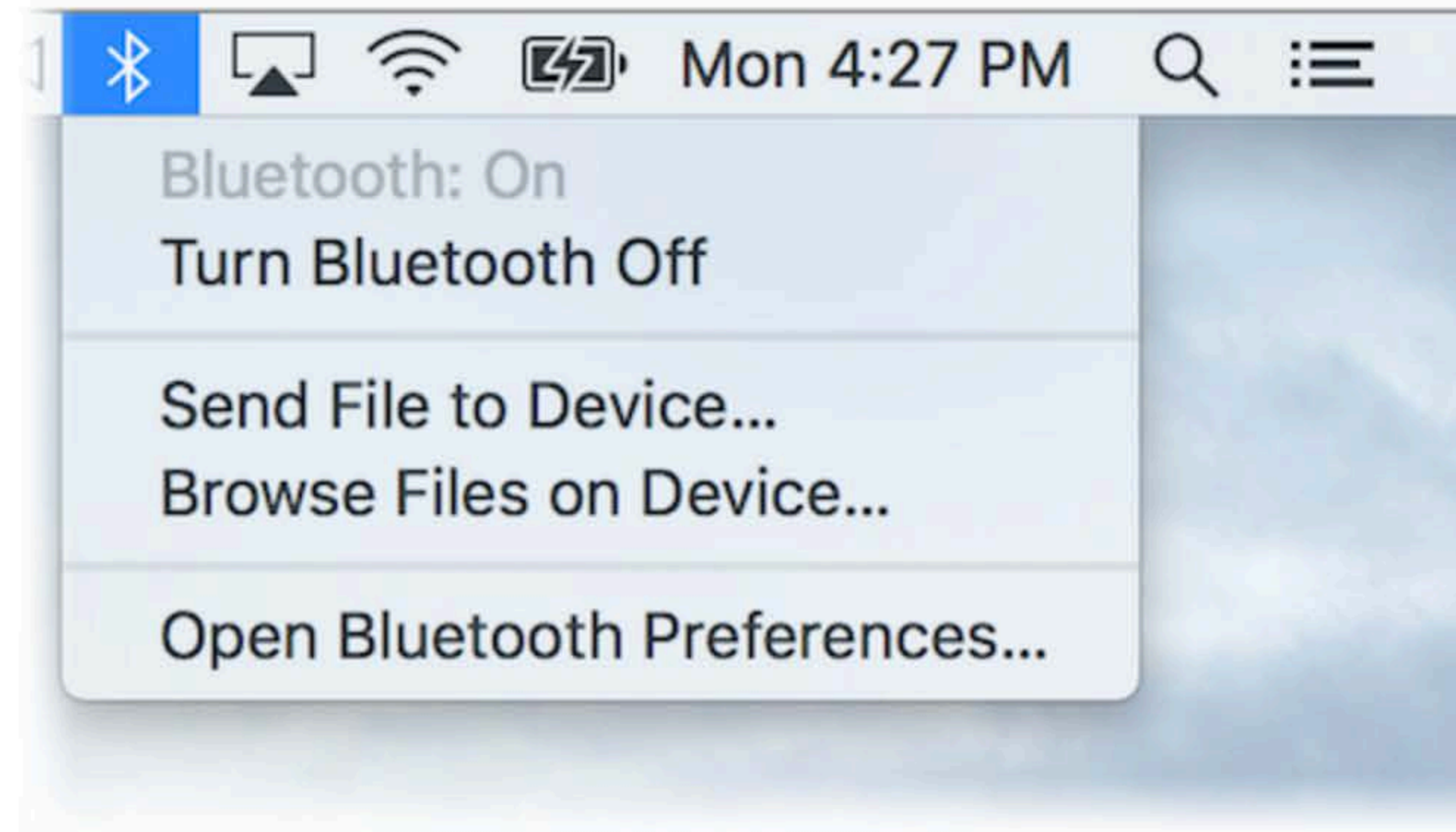
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OS X El Capitan: Connectivity

Bluetooth

Menu Bar

The Bluetooth menu bar icon in the upper-right of your display provides information about the status of Bluetooth and any devices that are connected.





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OS X El Capitan: Connectivity

AirDrop

AirDrop helps a customer quickly transfer files between a Mac and nearby Mac computers or iOS devices using Wi-Fi. The devices do not have to be connected to the same network in order to transfer files – the devices automatically set up a direct wireless connection for AirDrop.



Read Apple Support article, [HT203106: Use AirDrop to send files from your Mac to another nearby Mac or iOS device](#). You will be asked questions based on this content in the Quiz chapter or on the exam.





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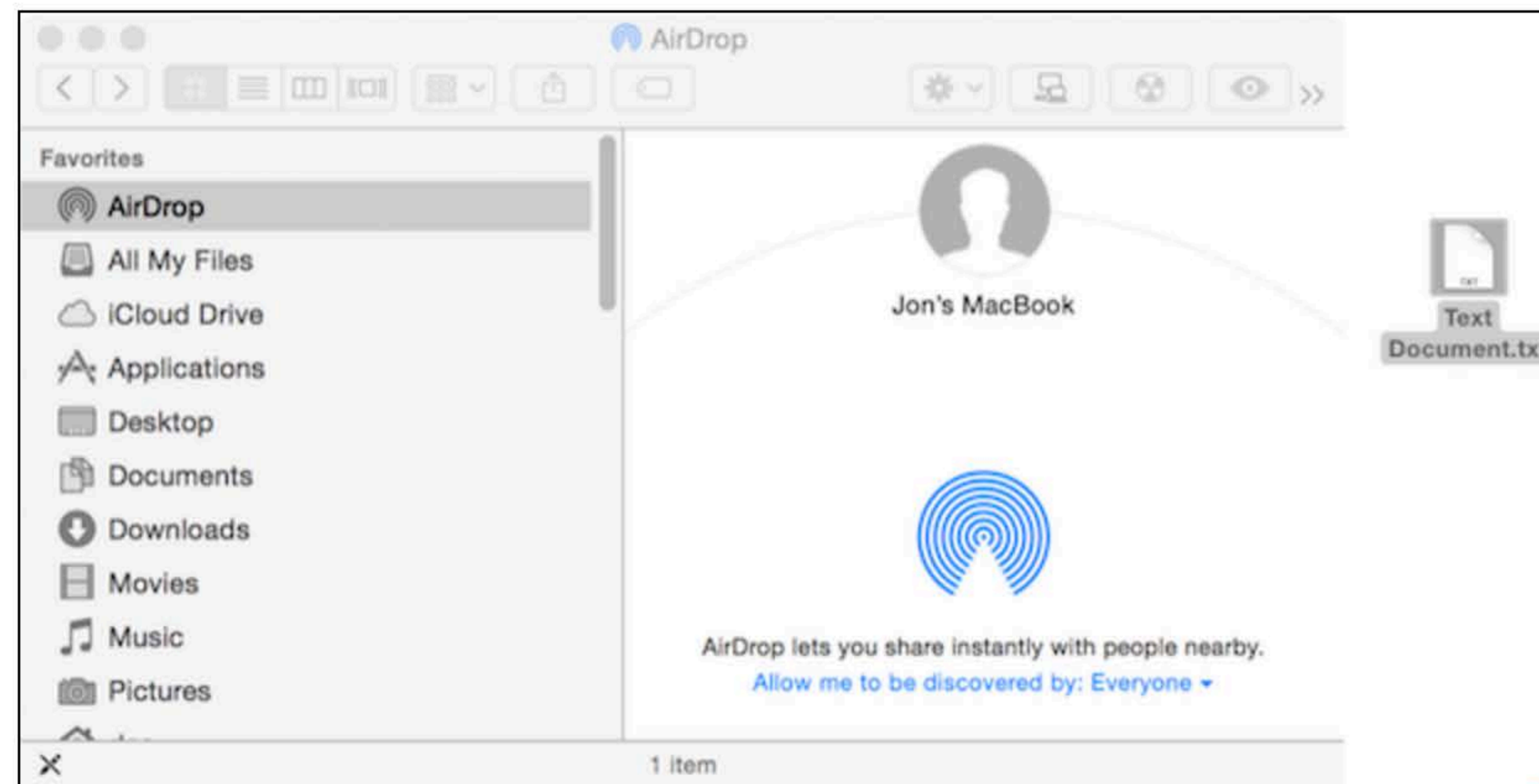
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AirDrop

Sending from Finder

In the simulation below and on the next page, follow the instructions to AirDrop a file from the Finder. Click the information (i) button on the lower right to see the hot spots.

1. Click the Text Document.txt icon to simulate dragging it to Jon's MacBook.





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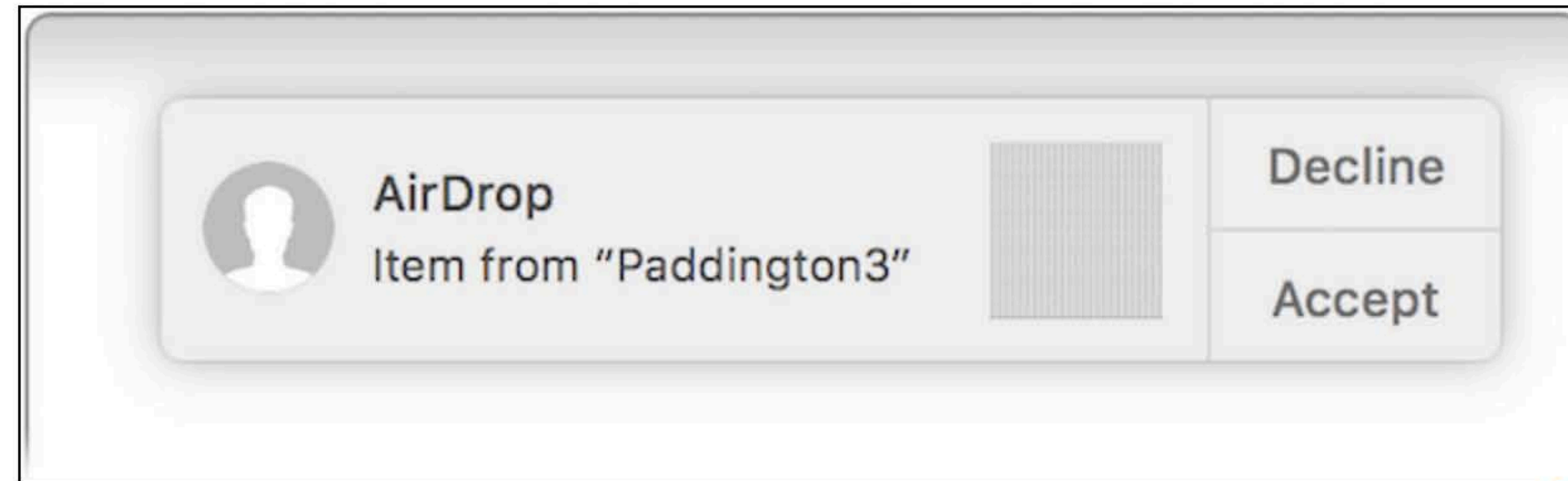
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AirDrop

Receiving in Finder

A notification appears on Jon's MacBook prompting the user to Decline or Accept.

1. Click Accept.





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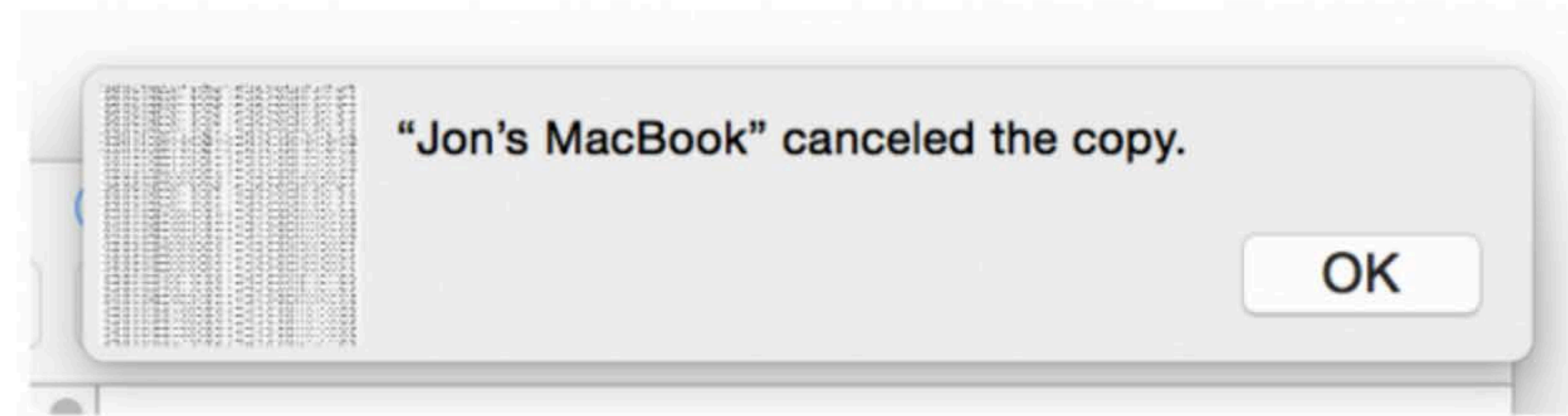
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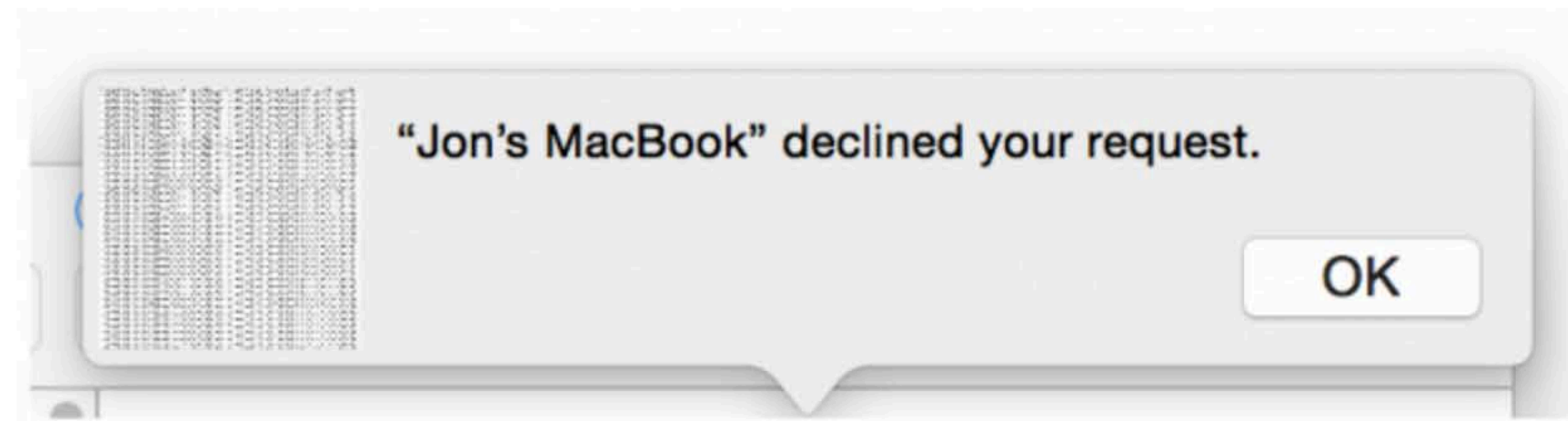
AirDrop

Results

If the AirDrop was interrupted by a connectivity issue, a canceled message will appear on the computer that sent the file. If the AirDrop was declined by the recipient, a declined message will appear on the computer that sent the file.



Canceled



Declined





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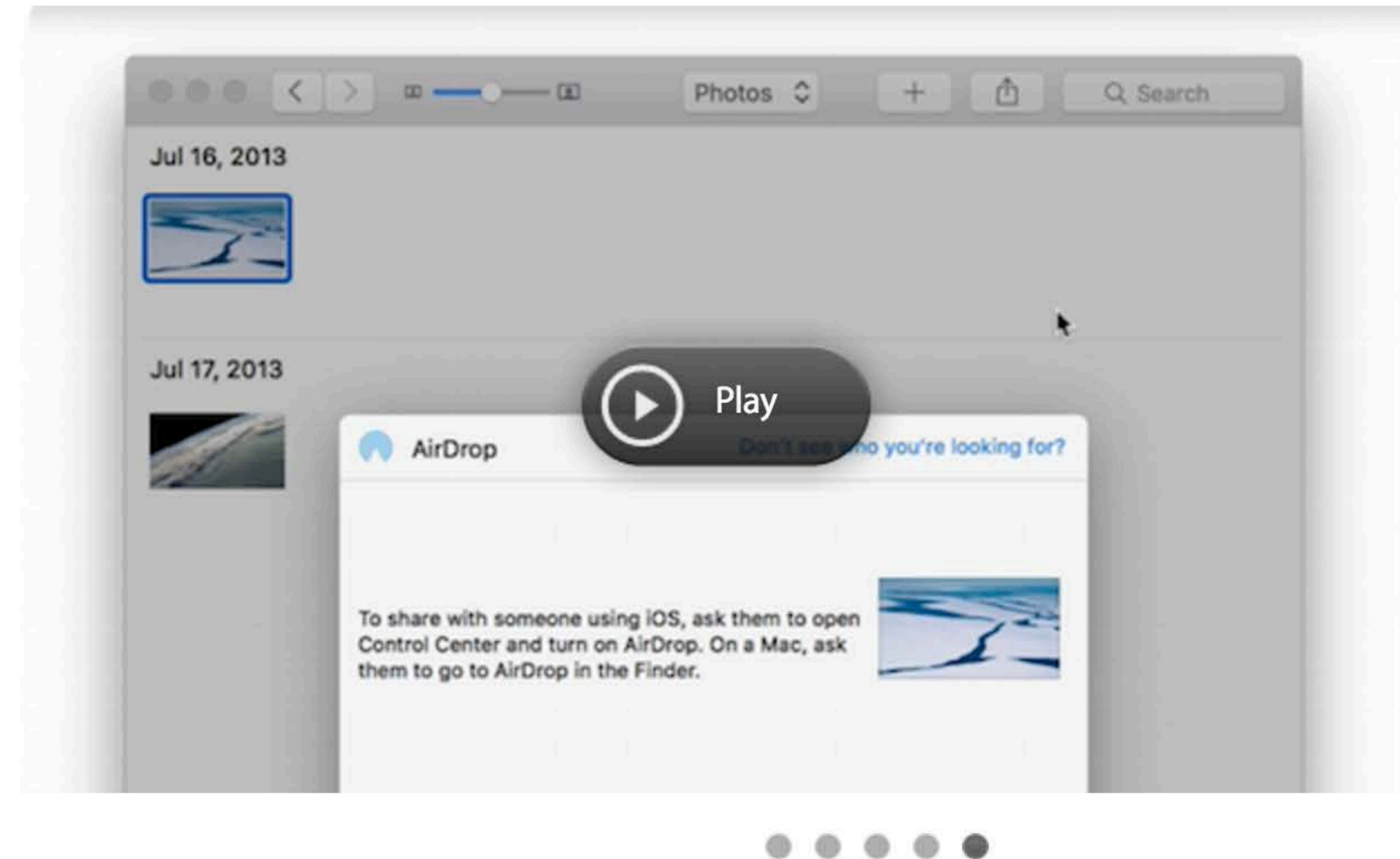
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AirDrop

From App

This video demonstrates how to use AirDrop directly from the Photos app using the Share feature.





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OS X El Capitan: Connectivity

AirPlay



AirPlay is a technology for streaming music, video, and other content wirelessly from Mac or iOS devices to an HDTV via Apple TV and for streaming music to AirPlay-enabled speakers, receivers, or AirPort Express devices. AirPlay Mirroring is a feature for wirelessly mirroring the screen of Mac and iOS devices on an HDTV.



Read Apple Support article, [HT201343: Use AirPlay to see your Mac screen on an HDTV](#). You will be asked questions based on this content in the Quiz chapter or on the exam.





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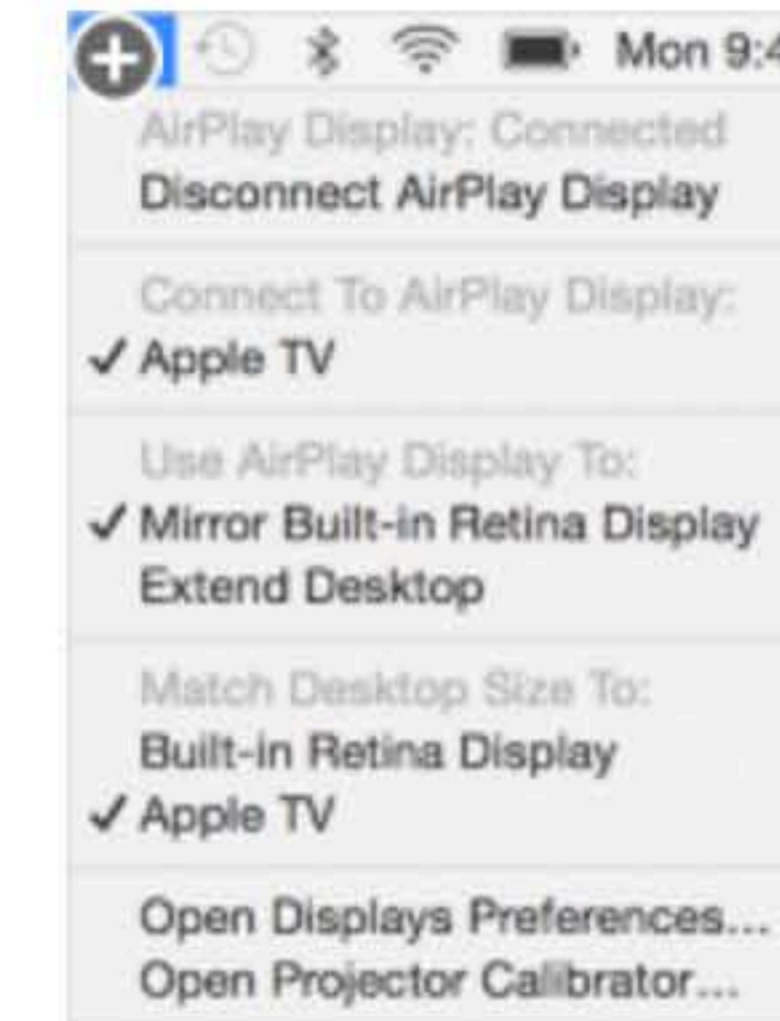
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AirPlay

AirPlay Mirroring

If the Mac supports AirPlay Mirroring, an AirPlay Mirroring menu appears in the menu bar when an Apple TV is on the same network. Turn on mirroring by selecting an Apple TV from the AirPlay Mirroring menu or from the Display pane of System Preferences.

To turn off AirPlay Mirroring, select "Turn Off AirPlay Mirroring" in the AirPlay Mirroring menu bar icon, or select AirPlay Display: Off in the Displays pane of System Preferences. Press the Menu button on the Apple TV remote to end the current AirPlay Mirroring session.





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OS X El Capitan: Connectivity

AirPlay

Optimize Image Quality

Select between two desktop resolution matching modes that determine which display will have the best image. When AirPlay Mirroring is turned on, select a "Match Desktop Size" choice via the AirPlay Mirroring menu bar icon.



Minimize Video Post-Processing

An HDTV will often apply picture quality enhancements intended to improve the look of film and video sources. In some cases, these enhancements can lead to over-sharpening artifacts when displaying the Mac desktop. Consult the HDTV's manual for guidance on the appropriate settings for use with a computer.



Read Apple Support article, [HT202763: Learn about overscan and underscan](#). You will be asked questions based on this content in the Quiz chapter or on the exam.





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OS X El Capitan: Connectivity

AirPlay

Verify AirPlay Mirroring is On

An AirPlay menu appears in the menu bar when an Apple TV is on the same network as a Mac. The AirPlay Mirroring menu icon turns blue when AirPlay Mirroring is on and connected. You can also turn AirPlay on from the Apple menu. Choose System Preferences then select Displays from the View menu.



Read Apple Support article, [HT202809: Use AirPlay to wirelessly stream content from iTunes on your computer](#). You will be asked questions based on this content in the Quiz chapter or on the exam.





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OS X El Capitan: Connectivity

Summary

Having completed this course, you should be able to:

- Use System Preferences in OS X to successfully configure a wired or Wi-Fi connection to an existing network.
- Use tools in OS X to successfully pair a Bluetooth device to a Mac.
- Using System Preferences, configure OS X to securely share data over a network.
- Enable AirDrop in OS X and successfully share a file with another AirDrop-enabled Mac or iOS Device.
- Describe how to display the screen of a Mac on an AirPlay-enabled device.
- Use System Preferences to create network Locations.
- In a simulated environment, use AirDrop to transfer a file to another Mac.
- Correctly answer a set of knowledge-based questions about connectivity in OS X.

This concludes the OS X El Capitan: Connectivity course. For other courses in the ACMT 2016 curriculum, see Apple Support article, [HT205332: AppleCare Service Certifications](#), or search for ACMT 2016 in ATLAS.