



How to Configure iBeacons in Jamf Pro

What is an iBeacon?

iBeacon™ is a communication protocol developed by Apple on top of Bluetooth Smart technology. It allows developers to create mobile apps aware of location context provided by beacons.

Apple's introduction to iBeacon is available at [developer.apple.com](https://developer.apple.com/ibeacon/).

You can read more about it here:

<https://developer.apple.com/ibeacon/Getting-Started-with-iBeacon.pdf>

iBeacon identifier

Beacons broadcast tiny packets of data, containing their iBeacon ID and information about signal strength, so that the device can understand which beacon it hears and how far it is.

Every iBeacon ID is 20 bytes long and is divided into three sections:

- UUID (16 bytes)
- major number (2 bytes)
- minor number (2 bytes)

Those values are hierarchical. Apple provides a great example of how you should think about them. Imagine different locations (defined by UUID) that deploys beacons in three cities (defined by major): New York, Connecticut and Chicago. It would look like this:

HCS location		New York	Connecticut	Chicago
UUID		G9RTEC1F-1725-67D0-80A9-GY79D4CEA95C		
Major		1	2	3
Minor	Deployment Services	10	10	10
	Manage Services	20	20	20
	Consulting Services	30	30	30

This guide was created and tested using Jamf Pro version 9.9.8



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Step 1 Power up your iBeacon.

Step 2 Launch RadBeacon or your iBeacon software. This guide will use the macOS version.

Step 3 Select your iBeacon and generate and or copy the UUID, Major, and Minor settings to a text document. You will need these setting later when adding the iBeacon to your Jamf Pro server. You can also adjust your iBeacons Transmit Power settings if required. See Transmit Power chart below. Click Apply when done.

Available transmission power values [dBm]

Hexadecimal Value	TX Power level	Decimal value	RSSI@1 meter	Range (meters)*
e2	0 ²	-30 dBm	-115 dBm	2
ec	1	-20 dBm	-84 dBm	4
f0	2	-16 dBm	-81 dBm	10
f4 ³	3	-12 dBm	-77 dBm	20
f8	4	-8 dBm	-72 dBm	30
fc	5	-4 dBm	-69dBm	40
0	6	0 dBm	-65 dBm	60
4	7	4 dBm	-59 dBm	70

*Range is an approximate figure and depends on other factors such as the operating environment, Beacon placement.



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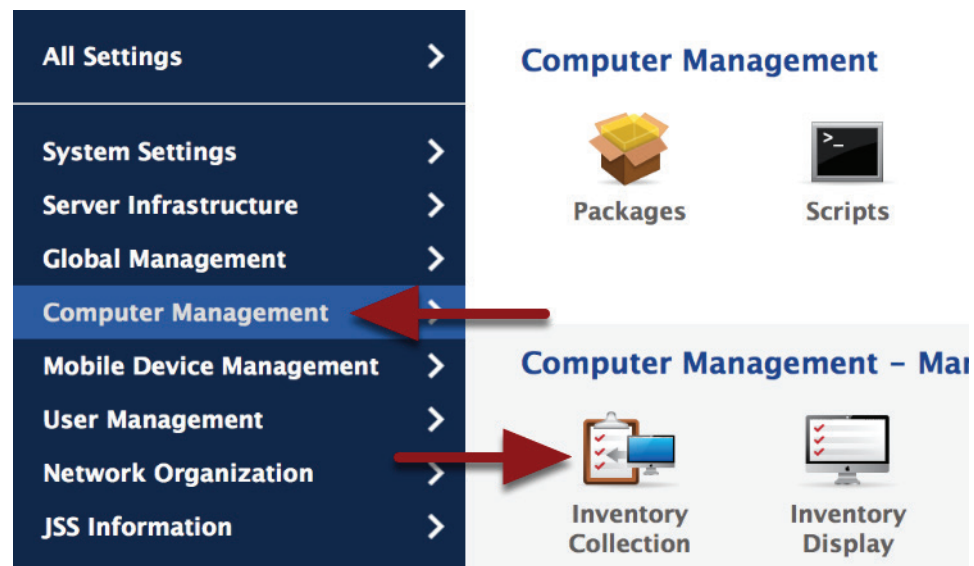
Step 4 Enter your PIN number to apply the changes then click OK.

Step 5 Log into your Jamf Pro server.

Step 6 Select the Settings Gear in the upper right corner.



Step 7 Select Computer Management from the sidebar, then select Inventory Collection.





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Step 8 Select the General tab, then make sure “Monitor iBeacon Regions” is checked. Click Save when done.

Computer Inventory Collection

General **Software**

- ☒ **Collect local user accounts**
Collect UUIDs, usernames, full names, and home directory paths for local user accounts
 - ☒ **Include home directory sizes**
 - ☒ **Include hidden accounts**
- ☒ **Collect printers**
Collect names, models, URIs, and locations of mapped printers
- ☒ **Collect active services**
Collect a list of services running on computers
- ☒ **Collect last backup date/time for managed mobile devices that are synced to computers**
- ☒ **Collect user and location information from LDAP**
Collect user and location information from the LDAP server when inventory is updated
- ☒ **Collect package receipts**
Collect a list of packages installed or cached using the Casper Suite, or installed by Installer.app or Software Update
- ☒ **Collect available software updates**
Collect a list of available software updates
- ☒ **Monitor iBeacon regions**
Monitor iBeacon regions and have computers submit information to the JSS when they enter or exit a region

Cancel Save

Step 9 Select the Settings Gear in the upper right corner.



Step 10 Select Network Organization from the sidebar, then select iBeacons.

Network Organization



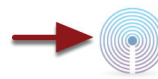
Buildings



Departments



Network
Segments



iBeacons



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Step 11 Enter the following:

- Display Name
- UUID - This is what you copied to a text document in step 3.
- Uncheck "Include Any Major Value"
- Major Value - This is what you copied to a text document in step 3.
- Uncheck "Include Any Minor Value"
- Minor Value - This is what you copied to a text document in step 3.
- Click "Save".

For more information on Major and Minor values, go here:

<http://developer.estimote.com/ibeacon/>

HCS iBeacon KM-1

Display Name
Display name for the iBeacon region
HCS iBeacon KM-1

UUID
UUID for the iBeacon region
42f843e8-74e0-4b3d-917e-1434fc44f2d1

☐ **Include Any Major Value**
Include iBeacon devices that have the same UUID and any major value

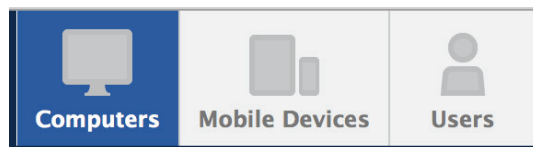
Major Value
Major value to use to further specify the iBeacon devices to be included in the region
3900

☐ **Include Any Minor Value**
Include iBeacon devices that have the same UUID and major value, and any minor value

Minor Value
Minor value to use to further specify the iBeacon devices to be included in the region
10

Cancel Save

Step 12 Click on the Computers button.



Step 13 Select Policies from the sidebar, then click the New button.





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Step 14 On the Options tab, select General, then configure the following:

- Display Name
- Make sure Custom is checked
- Give the custom event a trigger name of: beaconStateChange
- Set the Execution Frequency to what you desire. I used ongoing in this example.

iBeacon Downstairs

Options | **Scope** | **Self Service** | **User Interaction**

General

Display Name
Display name for the policy
iBeacon Downstairs

☒ **Enabled**

Site
Site to add the policy to
None

Category
Category to add the policy to
None

Trigger
Event(s) to use to initiate the p

☐ **Startup**
When a computer starts up

☐ **Login**
When a user logs in to a co

☐ **Logout**

☐ **Network State Change**
When a computer's network state changes (e.g. i changes, when the IP address changes)

☐ **Enrollment Complete**
Immediately after a computer completes the enr

☐ **Recurring Check-in**
At the recurring check-in frequency configured

☒ **Custom**
At a custom event

Custom Event
Custom event to use to initiate the policy. Fo
beaconStateChange

Execution Frequency
Frequency at which to run the policy
Ongoing

Step 15 Scroll down to the “Files and Processes” section, then configure it on the right. In the Execute Command section, enter say “You are downstairs”

iBeacon Downstairs

Options | **Scope** | **Self Service** | **User Interaction**

Files and Processes
Configured

Full path to the file

☐ **Delete file if found**

Search for File by Filename
Name of the file, including the file extension. This field is ca

☐ **Update "locate" database**
Update the "locate" database before searching for the fil

Search for File Using Spotlight
File to search for. This field is not case-sensitive and return

Search for Process
Name of the process. This field is case-sensitive and return

☐ **Kill process if found**
This works with exact matches only

Execute Command
Command to execute on computers. This command is exec
say "You are downstairs"



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Step 16 Click on the “Scope” tab”

- Target Computers - Select All Computers
- Select the “Limitations” tab.

iBeacon Downstairs

Options **Scope** Self Service User Interaction

Targets Limitations Exclusions

Target Computers
Computers to deploy the policy to
All Computers

Target Users
Users to deploy the policy to
Specific Users

+ Add

Target	Type
--------	------

No Targets

Step 17 Select the “iBeacons” tab, then Add your iBeacon.

iBeacon Downstairs

Options **Scope** Self Service User Inter

Add Limitations

Network Segments iBeacons

iBeacon Name

HCS iBeacon KM-1	Add
HCS iBeacon KM-2	Add

Done



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Step 18 Select the “Done” button.

iBeacon Downstairs

Options	Scope	Self Service	User Inter
Add Limitations			
<div>Network Segments iBeacons</div>			
<div>iBeacon Name</div> <div>HCS iBeacon KM-2 Add</div>			
<div>Done</div>			

Step 19 Select the “Save” button.

iBeacon Downstairs

Options	Scope	Self Service	User Interaction				
<div>Targets Limitations Exclusions</div>							
<div>+ Add</div>							
<table border="1"><thead><tr><th>Limitation</th><th>Type</th></tr></thead><tbody><tr><td>HCS iBeacon KM-1</td><td>iBeacon Remove</td></tr></tbody></table>				Limitation	Type	HCS iBeacon KM-1	iBeacon Remove
Limitation	Type						
HCS iBeacon KM-1	iBeacon Remove						
<div>Cancel Save</div>							

NOTE: In my testing I had two iBeacons so I created another policy called Upstairs and put that iBeacon on the upper level. That policy ran a command that said “Your are Upstairs”. This allowed me to test the iBeacons by entering and exiting the ranges.

Step 20 On a Mac that is enrolled in the Jamf Pro server, Open the jamf log file located at / private/var/log/jamf.log. Walk around to see whey you enter and exit a iBeacon region. The policy should run whenever you enter a new region

```
Fri Apr 21 12:04:01 work's Mac jamf[5939]: Entered iBeacon Region 2
Fri Apr 21 12:04:05 work's Mac jamf[7255]: Checking for policies triggered by "beaconStateChange" for user '
Fri Apr 21 12:04:09 work's Mac jamf[5939]: Exited iBeacon Region 1
Fri Apr 21 12:04:12 work's Mac jamf[7255]: Executing Policy iBeacon Upstairs
Fri Apr 21 12:08:33 work's Mac jamf[7606]: Checking for policies triggered by "recurring check-in" for user
```

This completes the How to Guide.