

EveryonePrint

Mobile Gateway 4.2

Installation Guide

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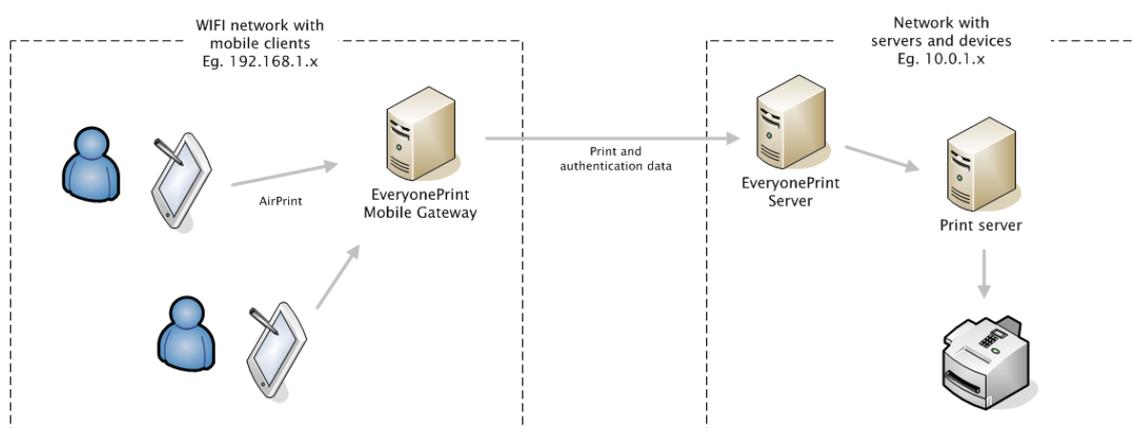
1. Introduction

The EveryonePrint Mobile Gateway is a small extension program to EveryonePrint, which acts as announcer of EveryonePrint printers to mobile devices and link mobile device clients in a WIFI network to the EveryonePrint server, for printing and authentication.

1.1 Multiple networks (using Multicast Bonjour AirPrint)

In most network configurations, print servers and print devices are in network subnets separate from WIFI client devices such as tablets and smartphones.

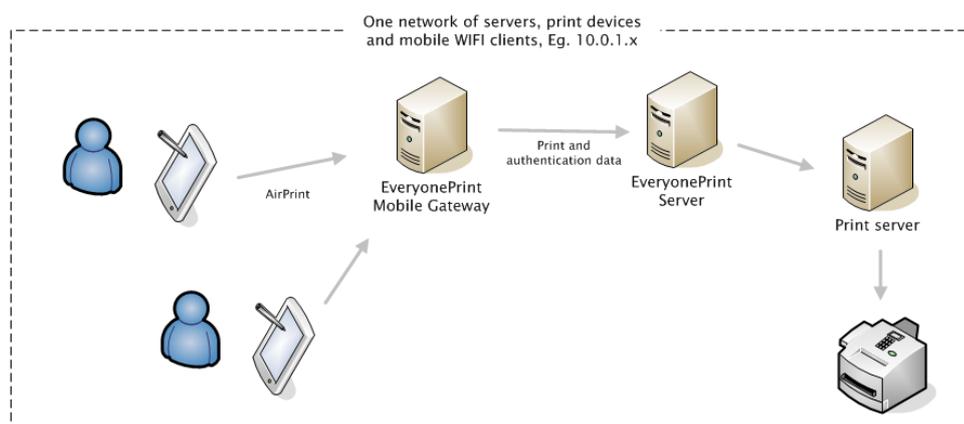
In this configuration install the EveryonePrint Mobile Gateway on a server with multiple NICs (Network Interface Cards), so the mobile devices can “see” the EveryonePrint Mobile Gateway in different subnets.



For an alternative to multicast mDNS Bonjour AirPrint using the more simple and more flexible Unicast DNS method, refer to the main EveryonePrint documentation and the feature Wide Area Mobile Print.

1.2 Single network

In the case of one single shared network of both servers, printers and WIFI mobile devices in one network, the EveryonePrint Mobile Gateway is used for announcing printers to mobile devices and handling print job data.



The EveryonePrint Mobile Gateway can be installed on the same server as the EveryonePrint server.

2. Pre-requisites and Requirements

2.1 EveryonePrint server requirements

It is assumed that an EveryonePrint server has already been installed and configured. EveryonePrint must be version 3.3 or later.

2.2 Printer requirements

There are no special requirements for the output printers. Any printer EveryonePrint can print to, is supported.

2.3 Network requirements

If using standard Bonjour AirPrint, then the Apple iOS devices and EveryonePrint Mobile Gateway must be on the same local subnet, for example 192.168.1.*.

Android devices do not necessarily need to be on the same subnet. If Android devices are on separate networks, and Gateway discovery is not available the Gateway details must be entered manually.

For multiple different sub networks, install an EveryonePrint Mobile Gateway in each subnet or use the Wide Area Mobile Print feature, as described in the main EveryonePrint documentation.

AirPrint via Bonjour is for use within internal networks only. AirPrint does not work across the Internet.

2.4 Gateway server requirements

The EveryonePrint Mobile Gateway can be installed on the same server as the EveryonePrint server.

The server on which the EveryonePrint Mobile Gateway is installed must have the following minimum requirements:

- Supported servers include: Windows 2003 SP2 (32 or 64 bit), Windows 2008 Server SP1 (32 or 64 bit) or Windows 2008 R2 Server (32 or 64 bit) or newer
- Recent generation server CPU processor, such as Intel Core, Xeon or equivalent
- Minimum 1 GB free RAM memory
- Minimum 5GB free hard disk space
- No anti-virus program monitoring or interrupting the EveryonePrint Mobile Gateway directories

2.5 Licensing

There is no separate licensing for the EveryonePrint Mobile Gateway or the EveryonePrint app. The licensing depends on the central EveryonePrint server.

2.6 Mobile device requirements

iOS app version < 4.0:

iOS version is required to be 4.3 or later (except 5.1.1)

iOS app version \geq 4.0:

iOS version is required to be 7.0 and later

Android app version < 4.0:

Android OS version is required to be 2.3 or later

Android app version \geq 4.0

Android OS version is required to be 4.0 or later

Windows Phone app version \geq 1.0:

Windows Phone OS required 8.1

2.7 Availability of gateway

The EveryonePrint Mobile Gateway is part of the EveryonePrint installation and can be installed separately or it can be downloaded from your EveryonePrint representative's Web site, or the EveryonePrint Web site at www.everyoneprint.com

2.8 Availability of mobile apps

Download the EveryonePrint Mobile app for Apple iOS from the link below or search for EveryonePrint in the Apple iTunes store:

<https://itunes.apple.com/us/app/everyoneprint/id565311817?mt=8>

Since version 3.3 of EveryonePrint and version 1.1 of EveryonePrint Mobile Gateway the EveryonePrint iOS app is only required for release code printing.

Direct and authenticated printing does not require the EveryonePrint iOS app. With authenticated print the user credentials are requested when selecting a printer in the AirPrint printer chooser dialog.

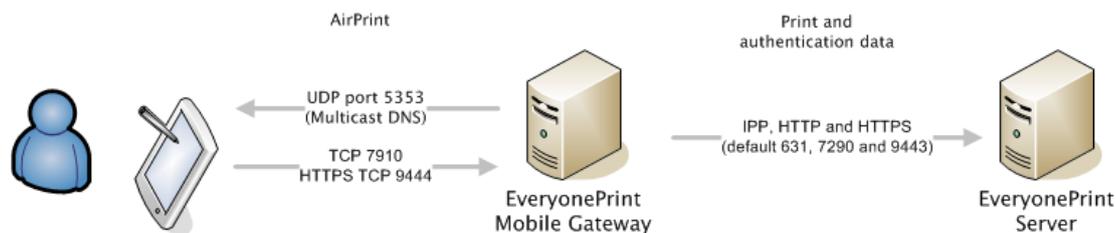
The EveryonePrint Android app is available for download from Google Market here:

<https://play.google.com/store/apps/details?id=com.nps.everyoneprint&hl=en>

The EveryonePrint Windows Phone app is available here:

<http://www.everyoneprint.com/go/winapp>

2.9 Ports and Protocols



The EveryonePrint Mobile Gateway communicates with the EveryonePrint Server application on the HTTP and HTTPS ports configured in the main EveryonePrint application (default 7290 and 9443).

The EveryonePrint Mobile app communicates with the EveryonePrint Mobile Gateway via HTTPS SSL encrypted TCP port 9444.

2.9.1 Apple iOS AirPrint

The EveryonePrint Mobile Gateway announces EveryonePrint printers on the Apple Bonjour protocol UDP port 5353 (Multicast DNS).

AirPrint print jobs generated by the iOS device will be sent to port 7910 on the EveryonePrint Mobile Gateway.

2.9.2 Wide Area Mobile Print

When using the Wide Area Mobile Print feature in EveryonePrint, the EveryonePrint Mobile Gateway listens and accepts incoming DNS TCP and UDP requests on the port 53.

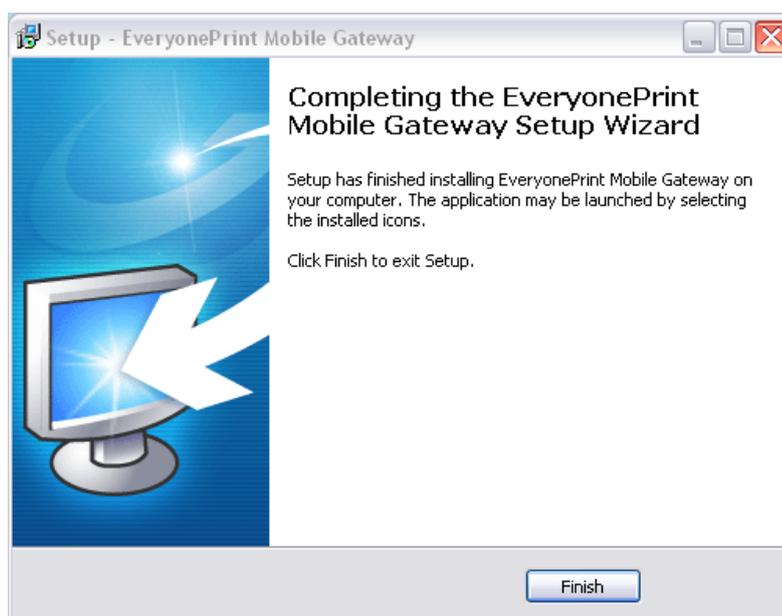
No other services, such as other DNS servers, can use the port 53 on the server on which EveryonePrint Mobile Gateway is running, or the Wide Area Mobile Print feature will not work.

3. Install and configure EveryonePrint Mobile Gateway

An EveryonePrint Mobile Gateway must be installed on a server which is on the same subnet as the iOS mobile devices.

3.1 Install Gateway

Start by running the Everyone Mobile Gateway installer, and continue through the installer wizard steps. The installation process is finished when you see this screen.

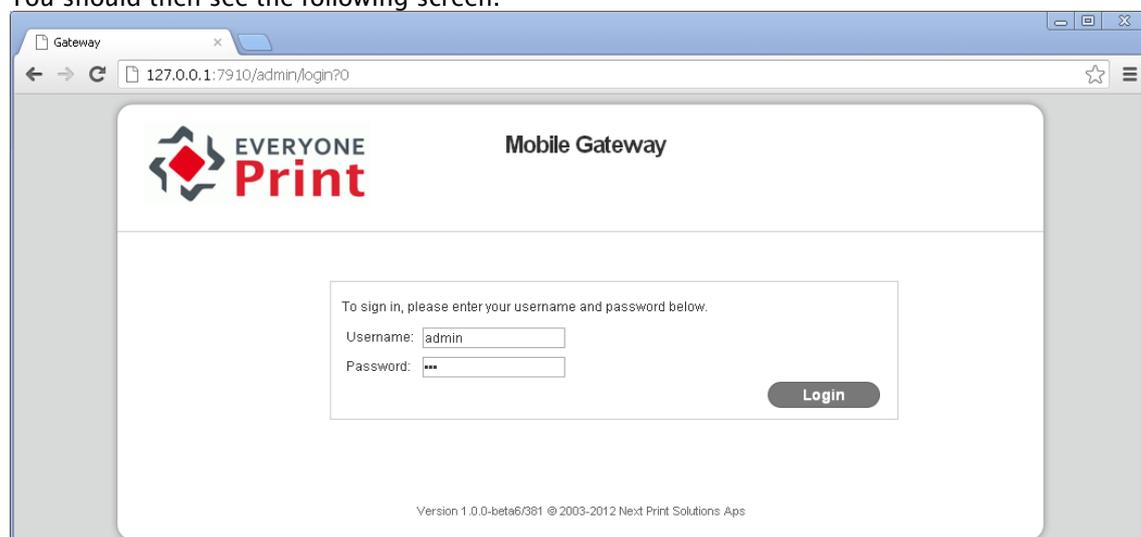


3.2 Configure Gateway

Start the Gateway configuration program by double clicking the file “AdminWebpage” in the program folder or by opening this URL in a browser:

<https://127.0.0.1:9444/admin/>

You should then see the following screen.

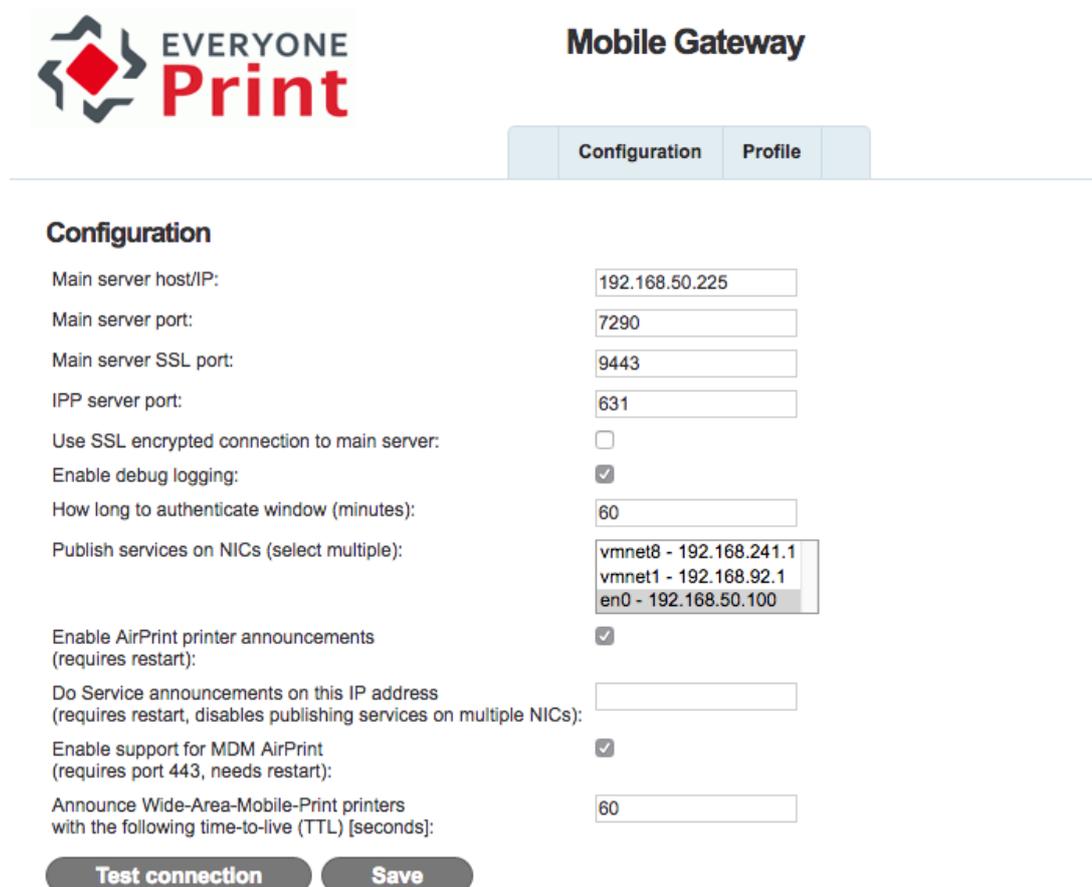


The default login credentials are:

Username: admin

Password: eop

Once logged in, the following settings may be adjusted.



The screenshot shows the 'Mobile Gateway' configuration page. It features the 'EVERYONE Print' logo and a navigation bar with 'Configuration' and 'Profile' tabs. The 'Configuration' section includes several settings:

- Main server host/IP: 192.168.50.225
- Main server port: 7290
- Main server SSL port: 9443
- IPP server port: 631
- Use SSL encrypted connection to main server:
- Enable debug logging:
- How long to authenticate window (minutes): 60
- Publish services on NICs (select multiple): A dropdown menu showing 'vmnet8 - 192.168.241.1', 'vmnet1 - 192.168.92.1', and 'en0 - 192.168.50.100'.
- Enable AirPrint printer announcements (requires restart):
- Do Service announcements on this IP address (requires restart, disables publishing services on multiple NICs): An empty text input field.
- Enable support for MDM AirPrint (requires port 443, needs restart):
- Announce Wide-Area-Mobile-Print printers with the following time-to-live (TTL) [seconds]: 60

At the bottom of the configuration section are two buttons: 'Test connection' and 'Save'.

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- EveryonePrint server host/IP
The hostname or IP address of the main EveryonePrint server.
If the Gateway is installed on a host different from the EveryonePrint server, this setting must be changed to reflect the EveryonePrint servers IP or hostname.
- EveryonePrint server port
The port of the EveryonePrint server. By default this is 7290.
- EveryonePrint server SSL port
The secure (SSL) port of the EveryonePrint server. By default this is 9443.
- IPP server port
The IPP server port. IPP server is a component of EveryonePrint server. By default this port is 631.
- Use SSL encrypted connection to EveryonePrint server
If this is enabled all communication of the Gateway with the EveryonePrint server will be encrypted.

- Enable debug logging
If this is enabled additional information will be logged to the log file. This is useful for EveryonePrint support in case of an error.

- How long to authenticate window
This setting configures how long pending jobs which were not yet authenticated are stored on the Gateway.

- Publish services on NICs
If multiple network cards are installed, choose the network interface on which to announce printers. Multiple interfaces can be selected/deselected using the common selection keyboard shortcuts. Changing NICs requires restart of the gateway service.

!!! Attention. Due to a bug in the JVM (Java virtual machine) the announcement on multiple NICs only works properly if the IPv6 option was enabled in the NIC configuration (system network configuration).
For more information see:
<https://bugs.openjdk.java.net/browse/JDK-6458027>
<https://bugs.openjdk.java.net/browse/JDK-6658085>

- Enable AirPrint printer announcements
If enabled printers retrieved from EveryonePrint server are announced for AirPrint using Apple Bonjour protocol, otherwise not.

- Do Service Announcements on this IP address
When an IP address is set here all announcements (AirPrint and gateway service) are being made for the given IP address instead of the hosts local IP address. This is relevant if using multiple gateways behind a load balancer or failover cluster, where the announced IP should be the cluster or load balancers IP address.

- Support for MDM AirPrint
This option allows the gateway to support AirPrint printers deployed via MDM (Mobile Device Management) providers.
This requires the gateway to occupy port 443 as encrypted endpoint for IPP communication. Hence, port 443 must not be taken already on the host system.
Re-start the gateway after toggling this setting.

- Wide-Area-Mobile-Print printer time-to-live settings
This option allows to change the TTL value that is used for printer announcements made via DNS-SD. Default value is 60 seconds.
This settings will be picked up on the next refresh of the DNS zones which happens every 2 minutes.

If the EveryonePrint server host and/or port is changed you may check the new settings are correct by choosing the "Test connection" button.

Press "Save" if you want to store the new settings.

The Gateway does not need to be restarted. Changed settings will be picked up automatically.

3.3 Profile

Administrator Profile

Administrator User Name: admin

Administrator New Password: (required)

Re-Type New Password: (required)

The Profile screen in the Gateway Admin lets you change the admin login password.

3.4 Using a custom keystore file

The standard keystore file (etc\keystore) includes a self-signed certificate that should suffice for most use-cases.

However, in gateway version 4.2 it is now possible to create a custom keystore file for using custom SSL/TLS certificates.

For this custom keystore file a custom password can be defined.

!!! Be aware that this is a not a trivial process. If the keystore file configuration or certificates therein are not correctly set up the gateway application or the encrypted ports may not work properly.

Do the following to create a new keystore file and configure the mobile gateway:

1. Follow this guide to create a custom keystore file
https://wiki.eclipse.org/Jetty/Howto/Configure_SSL
(Use this only to create the keystore file and import the certificates)
2. Make a backup of the old keystore file under "etc" folder
3. Copy the new keystore file to "etc". The new keystore file must have the name "keystore".
4. Edit defaults.xml file and enter the custom password of the keystore file into the entry "KeystorePassword".

You can enter the password in either plain text or in an encrypted form.

In plain text you should make sure the defaults.xml file is not accessible to everyone.

However the gateway application must have rights to read and write to it.

It's also possible enter the encrypted password. The gateway comes with a tool that can encrypt the password for you:

Open a command prompt and cd to the „tools“ folder in your gateway installation.

Execute the command „keystore_pw_enc.bat“ with the keystore password as parameter, like this:

```
c:\Program Files (x86)\EveryonePrint Mobile
Gateway\tools>keystore_pw_enc.bat foo
SUCCESS
Your encrypted keystore phrase is: 'ENC:8bC2IR8dxTE='
```

Enter the keystore phrase to defaults.xml into the entry field "KeystorePassword".

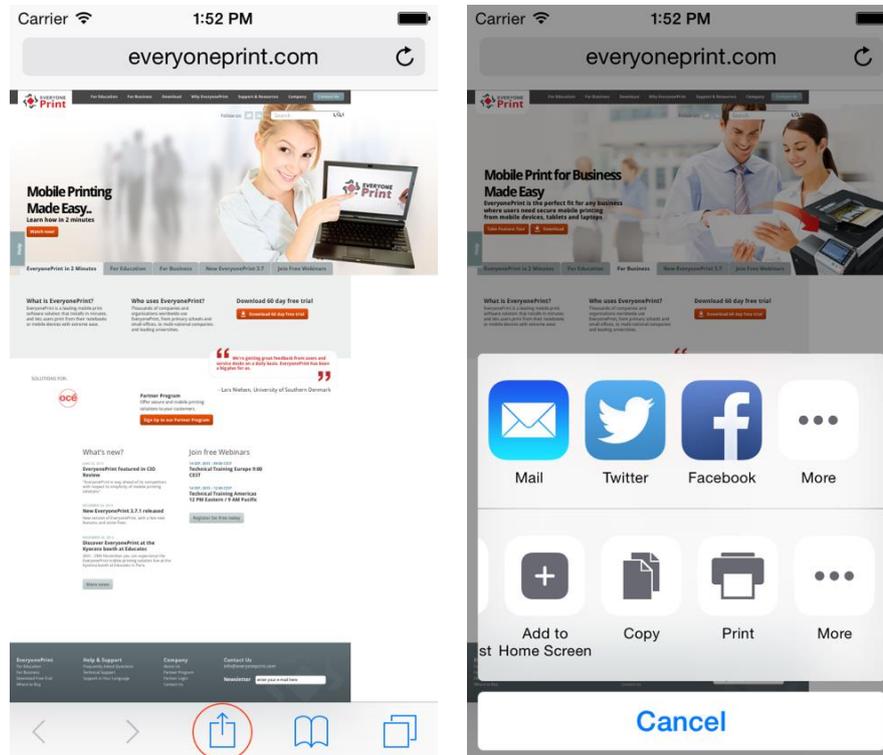
5. Now save defaults.xml and re-start the gateway.

Please be aware that the encryption of the keystore password is not a 100% security guaranty. You should make sure that the defaults.xml file is properly read protected on a file system basis.

4. Printing with AirPrint on iOS

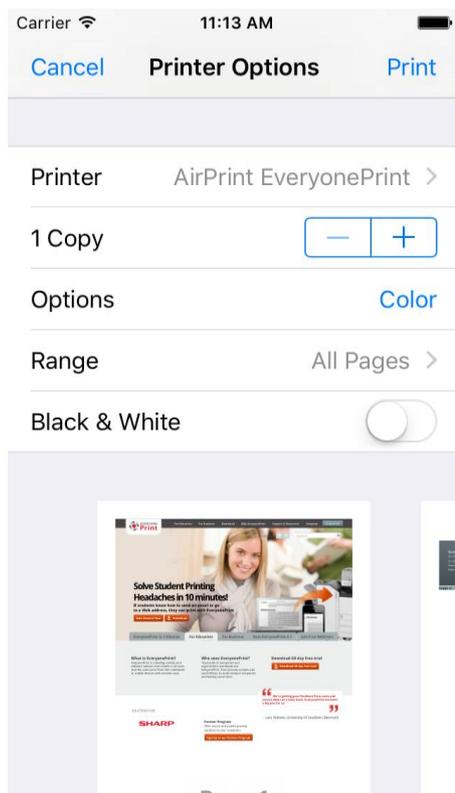
To print from any app via AirPrint select the export symbol and choose "Print". In the print dialog choose an EveryonePrint exposed printer from the list.

Depending on the EveryonePrint server release configuration the print job may be held in a queue for release or printed directly to the output printer.



The following output options are supported:

- Number of copies
- Color / B&W
- Page range



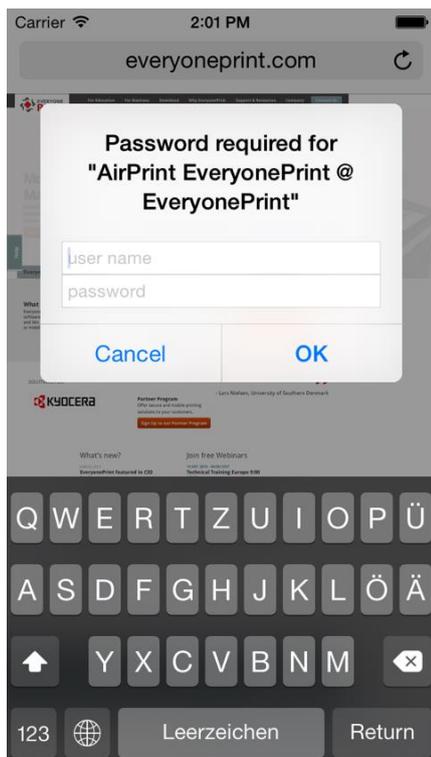
4.1 Authenticated print

If the release configuration is either “Direct with authentication” or “Privacy with authentication” you will see a login requester asking for username and password. This is because the printer resource is secured and requires authentication.

Once credentials have been entered iOS normally doesn't ask for them again. iOS will cache them and use them automatically when using the printer.

To reset the stored credentials the iOS network settings have to be reset.

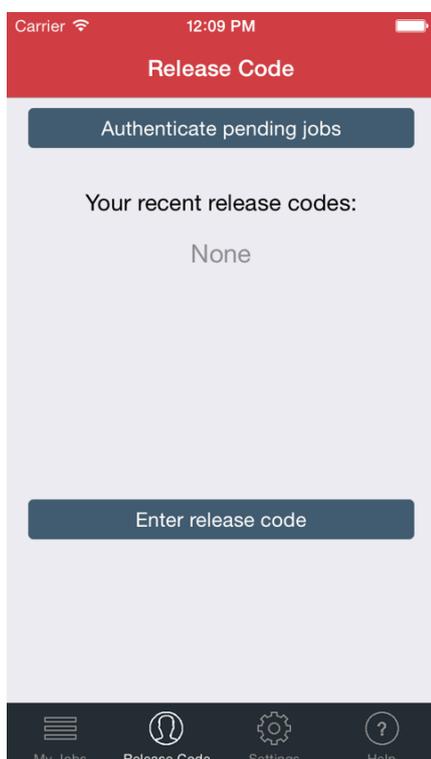
Or the “strict mobile authentication” feature of EveryonePrint may be used which is able to workaround this behavior. Please checkout the main EveryonePrint documentation for more information.



4.2 Printing with release code

When using release codes (EveryonePrint set to “Privacy with release code”) the iOS app must be used to retrieve the release code.

Use “Authenticate pending jobs” in “Release code” tab of the EveryonePrint app to retrieve release codes for print jobs submitted via AirPrint.



The retrieved release code will automatically be added to the list of release codes in this section.

5. Using the iOS EveryonePrint app

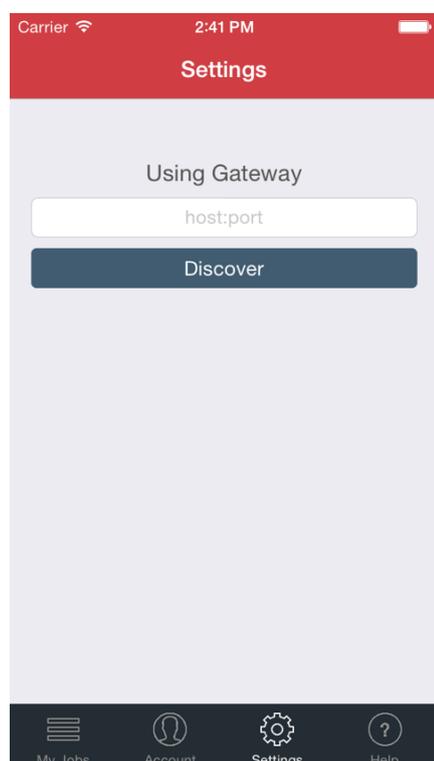
5.1 Configuration

5.1.1 Discovery

When using the EveryonePrint app for the first time it is required to connect it to the mobile gateway server application.

To do that select the “Settings” tab in the app and tap the “Discover” button.

The discovery process will try to find the gateway service announcement via mDNS and DNS-SD. Once it is found the domain name and port number of the mobile gateway host is automatically inserted in the text field.

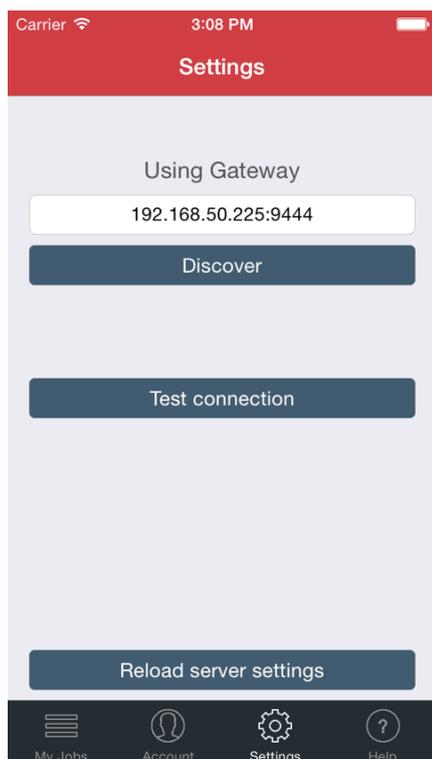


If the mobile app consistently is not able to discover the gateway, this may result in mobile devices also not being able to discover the EveryonePrint printers enabled for AirPrint.

5.1.2 Test connection

To validate the connection details use the connection test. The connection test will use the connection details from the text field to connect to the mobile gateway server.

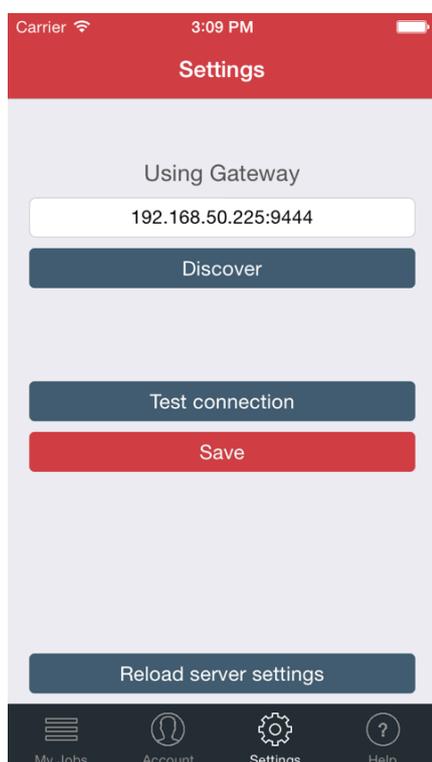
If it succeeds the “Save” button will appear.



5.1.3 Save connection

When the connection test has succeeded you should persist the settings by tapping the “Save” button.

This process will also retrieve the EveryonePrint server settings to re-layout the UI of the app according to the configuration made on the EveryonePrint server.



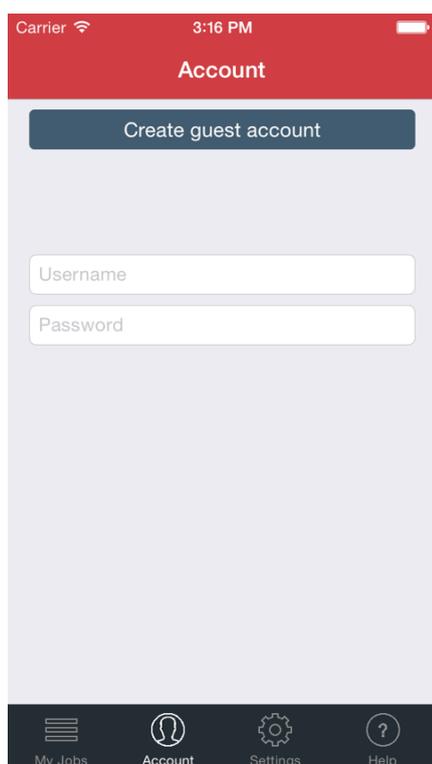
5.2 Account / Release code

Depending on the release configuration of the EveryonePrint server the second tab of the app is either “Account” or “Release Code”.

5.2.1 Account

Enter account information here if the release configuration is either “Privacy with authentication” or “Direct with authentication”.

This is especially required for the job release functionality of the app.

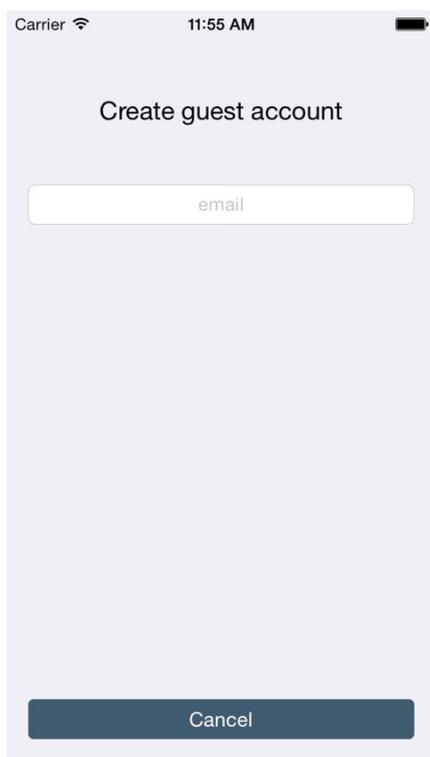


Use the “Create guest account” button for guest account creation.

Creating a guest account

This screen allows to create guest accounts.

Please be aware that this feature may be disabled. Please consult the EveryonePrint server documentation for more information about creating guest accounts.

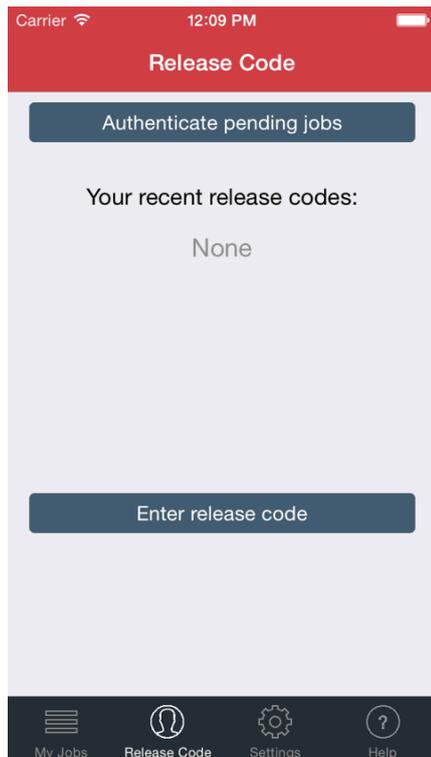


5.2.2 Release code

If "Privacy with release code" is configured as release configuration you will see all used release codes of the last 24 hours.

Be aware that job release functionality only works if at least one release code is available in this screen.

If this is not the case you may enter one by tapping the "Add release code" button.

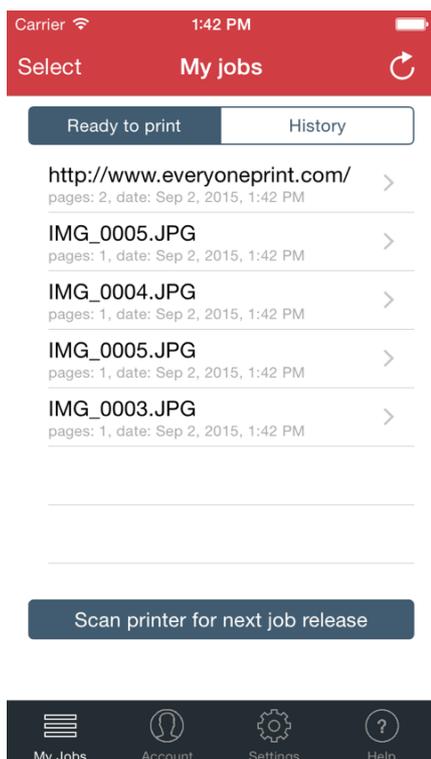


5.3 Releasing available print jobs

Available print jobs for an authenticated user or for a list of release codes is listed in the “MyJobs” tab. Use the refresh button in the toolbar to re-load the list.

Swipe left on a job for quick access to print and delete.

Multiple jobs can be selected for batch release/delete using the “Select” button.

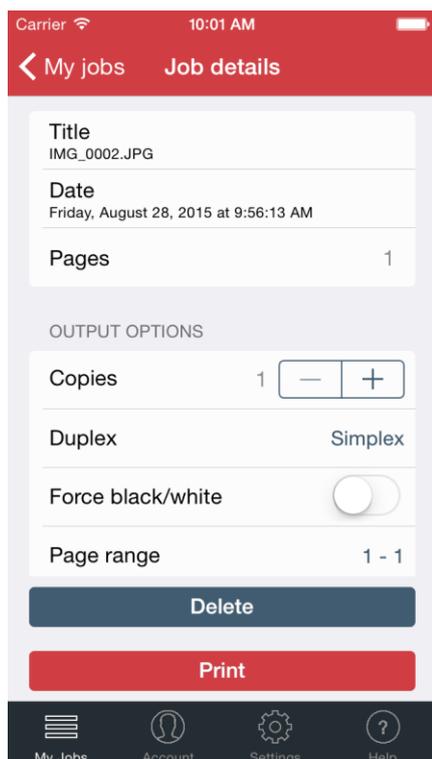


5.3.1 Release with customized output options

The MyJobs screen is in fact a master-detail screen. Choosing a job will open the job details. On this screen are also the configurable output options.

Output options can only be applied for a single job release.

The values for copies, duplex (simplex, long edge, short edge), black/white and page range can be configured.



5.3.2 Selecting the output printer

Releasing one or more jobs using the “Print” button will open the printer selection screen if there is more than one available printer to choose from.

See “Output printer selection” below.

5.4 Print using “Open in...” or the “Print with EveryonePrint” action

There are two options to print content from one app using the EveryonePrint app.

That is:

- Open in...
- Since iOS 8.0 the share or action extension

The EveryonePrint app supports both.

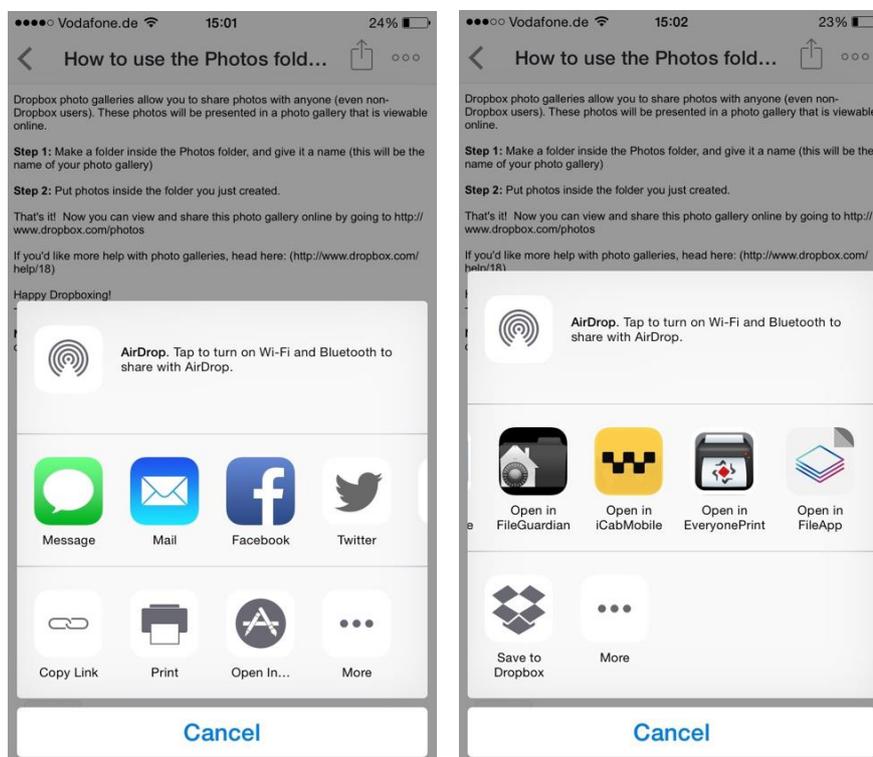
“Open in...” is only supported by a minor number of apps.

The action extension is supported by a higher number of apps.

In both cases the apps that distribute the data must support either “Open in...” or the action extension.

5.4.1 Printing with “Open in...”

To print documents using “Open in...” select the export symbol in the app of which you would like to print the content and choose “Open in...”. In the next dialog choose “Open with EveryonePrint”.

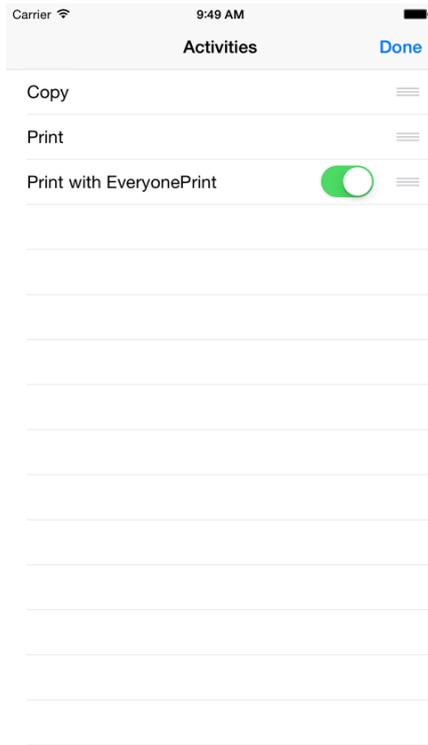
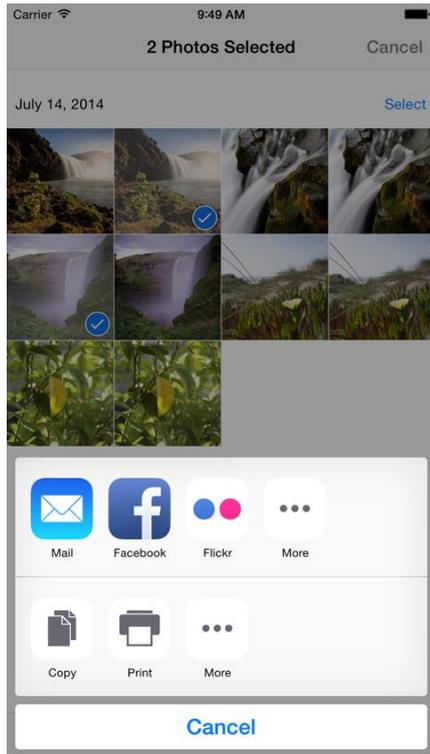


5.4.2 Printing using the “Print with EveryonePrint” action

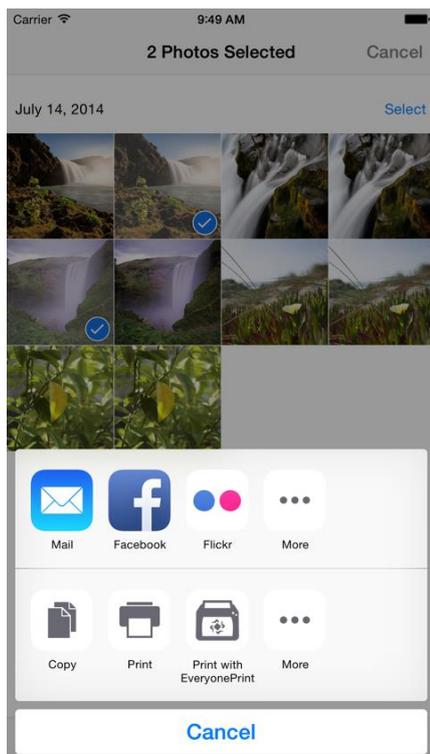
To print documents using the action extension select the export symbol in the app of which you would like to print the content. In the bottom of the export dialog are two rows of available apps for sharing. The EveryonePrint action extension is in the lower row.

If the “Print with EveryonePrint” symbol is not visible at first it must be manually enabled.

To do that choose the “More” button and enable “Print with EveryonePrint” in the next screen.



After doing this the “Print with EveryonePrint” should from then on be visible in the export dialog if the document to be printed is supported by EveryonePrint.



After the “Print with EveryonePrint” symbol was selected you may need to choose an output printer if more than one printer is available. See “Output printer selection” below.

5.4.3 Setting custom output options

Similarly as for releasing a print job it is also possible to configure output options when submitting a job.

The values for number of copies, duplex (simplex, long edge, short edge) and black/white can be configured.



5.5 Output printer selection

During the process of releasing a job or printing a shared document using “Open in...” or the “Print with EveryonePrint” action it may be required to choose an output printer from a list of available printers. If only one printer is available you will not see this screen.

5.5.1 Favorites

The favorites section is the default screen when the printer selection opens. Here you can quickly choose from your favorite printers.

To remove printers from the favorites either swipe left on a printer and choose “Delete” or select the “Edit” button from the tool bar.

Any available printer can be defined as favorite. To do that open the “All” section to show all available printers.



5.5.2 Available printers

Available printers are display in a 2 level master–detail view.

Printers may be configured to be part of a printer group. If there is only one or no group at all the printers are shown right away.

Otherwise a printer group must be chosen to select a printer of that group.

If a printer is chosen by tapping on it, it will be used as the output printer.

It is also possible to define printers as favorites by swiping left on a printer and choose "Favorite".



5.5.3 Scan a printer

Instead of choosing a printer from the lists it is also possible to scan a printer from a QR-code. To do that choose the “Scan” section button.

A new screen opens with a camera view. Get the QR-code in view to be scanned.

If the QR-code is a valid EveryonePrint printer QR-code as configured in the EveryonePrint server it is automatically chosen as output printer.

Due to iOS security and iOS action extension API limitations the “Print with EveryonePrint” action cannot access the camera and thus scanning does not work.

5.5.4 AirPrint vs. “Open in...” vs. “Print with EveryonePrint” action

EveryonePrint on iOS offers three ways of printing content.

The iOS native method AirPrint has the widest app support, meaning it is possible to print from almost all apps that have printable content.

Output options like number of copies, duplex, etc. is currently not supported for native AirPrint method.

Open in... is only available in a very low number of apps. Apps supporting this share the content with the EveryonePrint app. The EveryonePrint app sends the shared data to the EveryonePrint server for conversion.

Output options are supported.

The action extension works similar as the “Open in...” method only that it is available from a larger range of apps.

Output options are supported.
QR-code scanning is not available.

6. Android app

The EveryonePrint Android app version 4 has the same feature set as the iOS app and functions in a similar way.

Documents on Android apps can be printed using the "Share via..." functionality that is similar as the "Open in..." or "Print with EveryonePrint" action on iOS.

Choose the EveryonePrint app in the "Share via..." dialog.

The QR-code scanning uses the "zxing" ("zebra crossing") third-party library. This library is required to be available on the Android system. This is most probably already the case. If not please install the app "Barcode Scanner" to make the "zxing" library available system-wide:

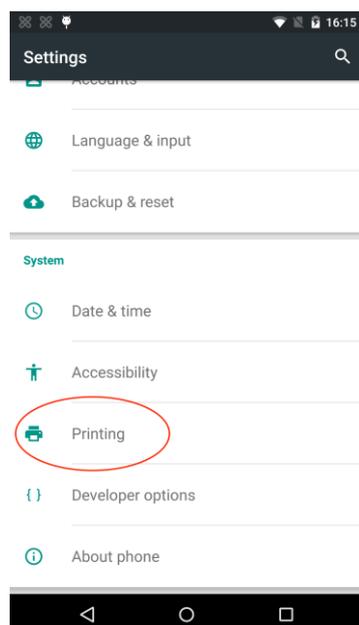
<https://play.google.com/store/apps/details?id=com.google.zxing.client.android&hl=de>

6.1 Native print on Android

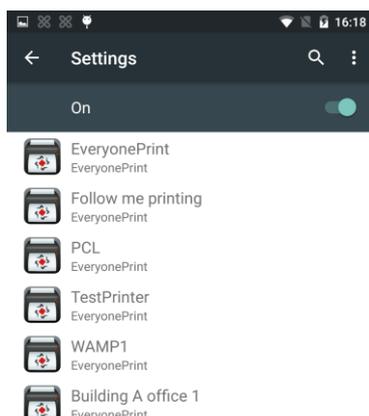
Version 4.2 of the EveryonePrint Android app includes support for native print functionality of Android OS. This is only available for Android OS \geq 5.0.

To use this functionality it's required to first open the EveryonePrint app and configure the connectivity (and login if required).

After that, go to Android Settings System->Printing.



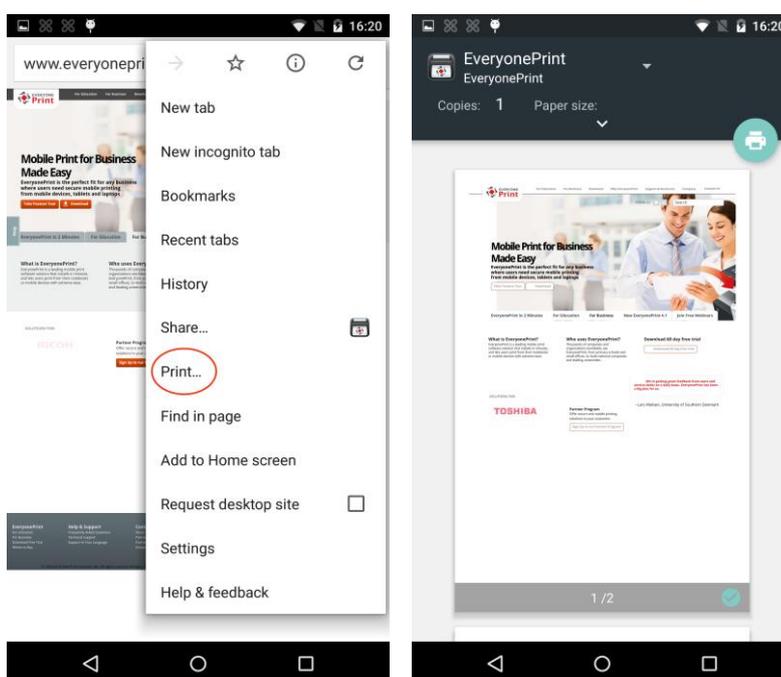
In the "Printing" configuration you should see the "EveryonePrint" printing service. It is disabled so we have to enable it. To do that select the "EveryonePrint" service and enable it at the switch control.



You should then see a list of printers available. The number of printers you see depends on your EveryonePrint configuration.

Now you can use the native print functionality from apps supporting this Operating System feature.

For example, to print from Google Chrome browser, just open a web page, open the menu and select "Print". In the print screen you should be able to select one of the printer we just have seen when enabling the print service.



The following list of apps is known to work with native printing on Android 5 and 6:

- Google Chrome
- Firefox
- Google Gmail
- Google Docs
- Google Photos
- Adobe Acrobat
- Microsoft Word
- Microsoft Excel
- Microsoft PowerPoint

The following output options are supported:

- Number of copies
- Color/B&W
- Page range

7. Windows Phone app

The EveryonePrint Windows Phone app supports Windows Phone version ≥ 8.1 .

It currently (as of version 1) supports printing documents using the "Share with..." functionality of the OS.

Currently it doesn't have any release job capability.

The automatic detection of the mobile gateway doesn't function. Connection details must be entered manually.

8. Troubleshooting and common questions

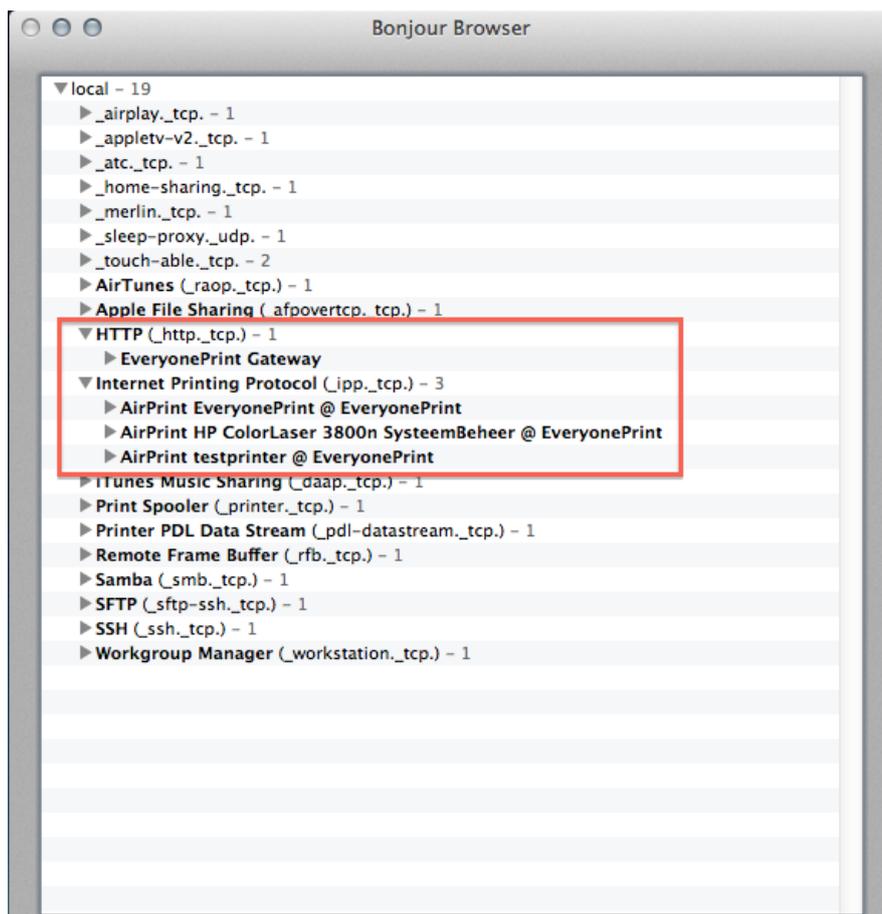
8.1 Printers and Gateway are not available

In order to discover the EveryonePrint Mobile Gateway (iOS and Android) and to see available printers (iOS only) it is required that there are no firewalls or routers blocking the gateway service and printer announcements from the EveryonePrint Mobile Gateway to the iOS and Android devices on UDP port 5353 (Apple Bonjour protocol UDP port 5353 (Multicast DNS)).

It is also required for the service and printer announcements to work that the iOS and Android devices are on the same WiFi Network as the EveryonePrint Mobile Gateway.

Correct announcements of Gateway and printers may be check using the tool "Bonjour Browser" available on Mac and iOS.

See <http://www.tildesoft.com>



8.2 Additional Bonjour announcement information

The EveryonePrint mobile gateway announces its service via Bonjour (mDNS) with the following information:

- Service type: “_http._tcp.local.”
- Service name: “EveryonePrint Gateway”

8.3 High availability and Mobile Gateway

Configuring the Mobile Gateway to ensure that the Mobile Print App or AirPrint capabilities are highly available, can be achieved in multiple ways:

1. Installing the Mobile Gateway on a failover cluster and using the failover cluster IP address for the sub domain delegations and/or App gateway host destination
2. Installing multiple Mobile Gateways on separate servers and using all mobile gateway server IP addresses for each sub domain delegation
3. Installing multiple Mobile Gateways on separate servers behind a load balancer, using the load balancers IP address for the delegations and/or App gateway host destination