ADVANCED
NETWORK DEVICES

Using Configuration Files

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OVERVIEW

Provisioning your AND devices with XML configuration files is an efficient and highly customizable method that allows for selective mass-distribution of settings to AND devices on your network. For details on configuration options and configuration file construction, please refer to our configuration file reference manual which can be found at our AND Customer Portal, or refer to the "Exploring XML" section of this document.

HOSTING CONFIGURATION FILES

Before provisioning your devices with a configuration file, you will need to host the configuration files at a location that can be accessed by the AND device. This section covers hosting configuration files using ClockWise Campus, InformaCast, and a TFTP or HTTP server.

HOSTING CONFIGURATION FILES WITH CLOCKWISE CAMPUS

Our proprietary software, ClockWise Campus, hosts a built-in HTTP server on port 8089. We can use this to host configuration files, among other resources.

1. On the machine running ClockWise Campus, navigate to the following location: C:\ProgramData\ClockWise\IPSpeaker
2. Place configuration file(s) in this location
3. Configure the local DHCP server's option 66 with the IP of the machine running ClockWise and port 8089 (e.g. "10.10.1.2:8089"), OR option 72 - appending the directory "/IPSpeaker/"
    - Alternatively, set the "configuration file path" manually to this location in the web interface under Device Settings → Network.
4. Reboot your devices to allow them to grab new configuration files.

HOSTING CONFIGURATION FILES WITH SINGLEWIRE INFORMACAST

InformaCast automatically generates configuration files for your devices once they are registered to the server. These configuration files are created from the global file, InformaCastSpeaker.cfg. Any changes made to the global file will be reflected in every device registered to InformaCast.

1. Using a file transfer tool like WinSCP, access your InformaCast Server.
    - Use SFTP protocol, port 22, and the IP of your InformaCast Server as the Host Name. The default username for InformaCast is "admin" with no password.
    - Navigate to /data/d_[version_number]/usr/local/singlewire/InformaCast/web/resources/
    - Place or edit configuration file(s) in this location

2. Advertise the InformaCast resource location. Choose one:
    - Create a DNS SRV record for InformaCast (see this Singlewire support page)
    - Enable SLP in InformaCast (Admin → Settings → SLP) with scope "Berbee Applications"
3. Reboot your devices to allow them to grab new configuration files.

HOSTING CONFIGURATION FILES WITH A TFTP/HTTP SERVER

1. Place your configuration files onto your TFTP/HTTP server with your preferred method.
2. Configure automatic retrieval of resource location
    - For a TFTP server, choose one:
        - Configure DHCP option 66 or 150 with the resource location
        - Set the SLP scope of the device manually in the web interface under Device Settings → Network to match the SLP scope of your TFTP server.
    - For a HTTP server, choose one:
        - Configure DHCP option 66 or 72 with the resource location
        - Configure DNS SRV record with the resource location
    - Alternatively, set the "configuration file path" manually in the web interface under Device Settings → Network.
3. Reboot your devices to allow them to grab new configuration files.

CONFIGURATION FILE NAMING CONVENTIONS

AND devices will search their assigned resource locations for configuration files which follow a specific naming convention and apply them differently depending on the convention being used.

These naming conventions are as follows:

GLOBAL FILES

The global file is applied to all AND devices that search for it. The global file should be named:

- "IPSpeaker.xml" or "IPSpeaker.cfg"

AGGREGATE FILES

Aggregate files are a popular method for provisioning a whole network of devices with one file, as they can specify several scopes and configurations for each scope within one file. An aggregate file can be named whatever you wish, but the following line must be placed into your global configuration file:

- <AggregateSpeakerConfigFile file = "AllSpeakers.xml" />

This example specifies “AllSpeakers.xml” as the name of the aggregate file.

Within the aggregate config file, you should use the <AllSpeakers> tag to enclose the entire document, and <Speaker> tags for each scope you wish to define. For example, the following aggregate config file would define two scopes: one for the model IPSWD-RWB, and one for the MAC address 20:46:F9:10:20:30:

```
<AllSpeakers>
    <Speaker model="IPSWD-RWB">
        (configuration here)
    </Speaker>
    <Speaker mac="2046F9102030">
        (configuration here)
    </Speaker>
</AllSpeakers>
```

MAC-SPECIFIC FILES

MAC-Specific files are the smallest in scope, applying to an individual device by using its MAC address as a unique identifier within the config file name. MAC-Specific configuration files should be named:

- "IPSpeaker<MAC>.xml" or "IPSpeaker<MAC>.cfg"

<MAC> should be replaced by the alphanumeric MAC address of the device.

ADD FILES

Add files are a great tool for minute adjustments. They are parsed as “additional files” and any non-conflicting settings are added to whatever configuration is defined in the rest of the retrieved configuration files. Add files can be MAC address or model specific. These files should be named:

- "IPSpeakerAdd<MAC>.xml" for a MAC-specific add file
- "IPSpeakerAdd<Model>.xml" for a model-specific add file

SINGLEWIRE INFORMACAST CONFIGURATION FILES

InformaCast can generate one or two configuration files for any given device:

- "InformaCastSpeaker<MAC>.cfg" for each device, and
- "InformaCastSIPSpeaker<MAC>.cfg" for each device configured as a SIP intercom

These auto-generated configuration files are hosted on the cloud and cannot be directly modified. Instead, the default “InformaCastSpeaker.cfg” file located in the resources directory acts as the global file and can be edited with whatever global configuration you wish to apply, including declaration of an aggregate file.

LOAD ORDER (PRIMARY AND SECONDARY FILES)

The device will attempt to retrieve up to one primary file, then if found searches for all applicable secondary files.

The device will check the resource location for a primary configuration file in the following order:

1. "IPSpeaker<MAC>.xml"
2. "IPSpeaker<MAC>.cfg"
3. "InformaCastSpeaker<MAC>.cfg"
4. "IPSpeaker.xml"
5. "IPSpeaker.cfg"
6. "InformaCastSpeaker.cfg"

If any of these files are found, the device stops searching for a primary file and begins searching for secondary files in the following order:

1. Aggregate File (Model scope)
2. Aggregate File (MAC scope)
3. “InformaCastSIPSpeaker<MAC>.cfg”
    - Only searched for if the primary file retrieved was “InformaCastSpeaker<MAC>.cfg”
4. "IPSpeakerAdd<Model>.xml”
5. "IPSpeakerAdd<MAC>.xml"

Any settings defined in a secondary file will overwrite conflicting settings from the primary file.

UNLOCKING WEB DEVICE SETTINGS

AND devices restrict access to the Device Settings page in the web interface when being served a configuration file. This feature enhances security by disallowing unauthorized alteration of settings via the web interface. There are several reasons that one may need to restore access to these settings though, so this section will guide you through the recommended method to unlock device settings.

SERVING A “SMALL” FILE

A “small” configuration file is one that is too short to be parsed by AND devices, and thus prevents parsing of any configuration files. Thus, by hosting a small configuration file and serving it to the target device(s), the device(s) will no longer be receiving configuration from a configuration file, and will unlock device settings within the web interface.

1. To create a small configuration file, create a file with a naming convention that suits your use case, then enter only two periods into this file (the only contents of the file should be "..").
2. Host this file with a method of your choice from those detailed in the "Hosting Configuration Files" section of this document.
3. Reboot your devices to allow them to grab the small configuration file.

EXPLORING XML

With the device settings unlocked in the web interface, we can access the Device Settings → XML page. This page shows the current device configuration in XML format. Using this page, you can change settings on other pages within the web interface and check back to see how the changes you made affect the XML code.

This XML code shares the exact same format as configuration files, so it is possible to copy the text on this page directly into a configuration file and apply it to a device.