

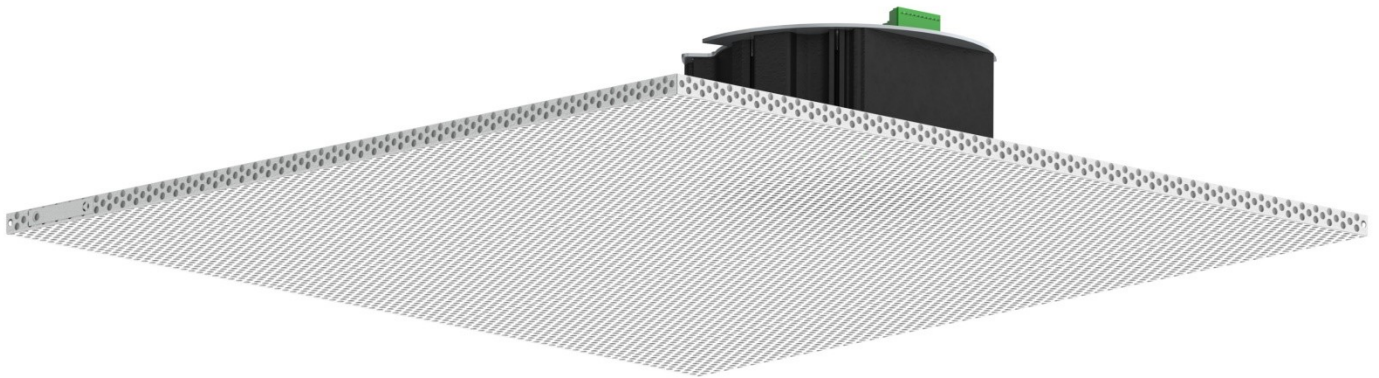


wahsega  
labs

**Wahsega Speaker  
with InformaCast® and SIP**

***Application Note***

***Advanced Configuration***



This application note will guide you through advanced XML configuration options for the Wahsega Labs speaker with InformaCast®.

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Customize your speaker's InformaCast configuration file to push System, Network, SIP and InformaCast settings for faster initialization on larger projects.

## Getting Started

1. On the InformaCast server, find the filename corresponding to your device's name and MAC address. It will be in the format

`InformaCastSpeaker<mac_address>.cfg`

(for example, `InformaCastSpeaker012345678a9b.cfg`).

2. You will see two MAC addresses corresponding to the same device. Use the first address for your device, which is the one corresponding to "Room 1 InformaCast."
3. Edit the text file, adding the desired features corresponding to the options in the following sections. Be sure to follow the required format as explained below.
4. Using "Reboot IP Speaker" option in the InformaCast configuration webpages, reboot your speaker for the changes to take effect.
5. Wait approximately one minute for speaker to reboot with changes.

If you have any difficulty, consult [Troubleshooting](#) or call Wahsega Support at 888.509.2379.

## Example Configuration File

```
<InformaCastSpeakerConfiguration>

  <Servers>
    <InformaCast url="http://123.456.78.91:8081/InformaCast/admin?cmd=spkr"/>
  </Servers>

  <!--
    <Firmware file="firmwares/bernoulli_romulus_secure_0_17_1_20160308.bin" />
  -->

  <wah:X_deviceFlatConfig xmlns:wah="urn:schemas-wahsega-com:DeviceFlatConfig-1-0">

    <wah:setting path="voip.accounts[0].enabled" value="true" />
    <wah:setting path="voip.accounts[2].enabled" value="true" />
    <wah:setting path="voip.accounts[0].informacast.max_streams" value="2" />
    <wah:setting path="voip.accounts[2].informacast.max_streams" value="2" />

    <wah:setting path="voip.accounts[1].enabled" value="true" />
    <wah:setting path="voip.accounts[1].user" value="123" />
    <wah:setting path="voip.accounts[1].name" value="Ext 123" />
    <wah:setting path="voip.accounts[1].sip.domain" value="sip.wahsega.com" />
    <wah:setting path="voip.accounts[1].sip.register" value="true" />
    <wah:setting path="voip.accounts[1].sip.loose_uri_matching.username" value="false" />
    <wah:setting path="voip.accounts[1].sip.local_port" value="5060" />
    <wah:setting path="voip.accounts[1].sip.authentication.username" value="456" />
    <wah:setting path="voip.accounts[1].sip.authentication.password" value="admin" />

    <wah:setting path="voip.accounts[3].enabled" value="true" />
    <wah:setting path="voip.accounts[3].user" value="124" />
    <wah:setting path="voip.accounts[3].name" value="Ext 124" />
    <wah:setting path="voip.accounts[3].sip.domain" value="sip.wahsega.com" />
    <wah:setting path="voip.accounts[3].sip.register" value="true" />
    <wah:setting path="voip.accounts[3].sip.loose_uri_matching.username" value="false" />
    <wah:setting path="voip.accounts[3].sip.local_port" value="5070" />
    <wah:setting path="voip.accounts[3].sip.authentication.username" value="789" />
    <wah:setting path="voip.accounts[1].sip.authentication.password" value="admin" />

    <wah:setting path="gemini.mode" value="2rooms" />
    <wah:setting path="gemini.buttons.panic.short_press.uri" value="342" />
    <wah:setting path="gemini.buttons.panic.long_press.uri" value="344" />

  </wah:X_deviceFlatConfig>

</InformaCastSpeakerConfiguration>
```

---

## Breaking Down the Configuration File

- Do not alter the first section. (Your file may look a little different, depending on your server's configuration.)

```
<InformaCastSpeakerConfiguration>

  <Servers>
    <InformaCast url="http://123.456.78.91:8081/InformaCast/admin?cmd=spkr"/>
  </Servers>

  <!--
    <Firmware file="firmwares/bernoulli_romulus_secure_0_17_1_20160308.bin" />
  -->
```

- Begin with the following line of code:

```
<wah:X_deviceFlatConfig xmlns:wah="urn:schemas-wahsega-com:DeviceFlatConfig-1-0">
```

- Insert the configuration options you would like to include. Be sure to format your inserted elements in the following manner:

```
<wah:setting path="[configuration option]" value="[acceptable value]" />
<wah:setting path="[configuration option]" value="[acceptable value]" />
```

- Next, insert the following line of code:

```
<wah:X_deviceFlatConfig>
```

- Do not alter the last section.

```
</InformaCastSpeakerConfiguration>
```

# Configuration Options

---

## System

### NTP Settings

The NTP (Network Time Protocol) section contains the settings needed to set the time via a network server.

#### *system.ntp.dst*

- When DST is true, adjustment for daylight saving time will be used. If false, adjustment will not be performed.
  - Data type – Boolean
  - Default value – “true”
  - Acceptable values
    - “true”
    - “false”

#### *system.ntp.time\_zone*

- This string represents the GMT offset which will be used when setting the local time from the remote time server
  - Data type – String
  - Default value – “-300b”
  - Acceptable values
    - See table below

String	Meaning
"-720a"	(GMT-12:00) Eniwetok, Kwajalein
"-660a"	(GMT-11:00) Midway Island, Samoa
"-600a"	(GMT-10:00) Hawaii
"-540a"	(GMT-09:00) Alaska
"-480a"	(GMT-08:00) Pacific Time (US & Canada)
"-420b"	(GMT-07:00) Arizona
"-420a"	(GMT-07:00) Mountain Time (US & Canada)
"-360b"	(GMT-06:00) Central Time (US & Canada)
"-360a"	(GMT-06:00) Mexico City, Tegucigalpa
"-300c"	(GMT-05:00) Bogota, Lima, Quito
"-300b"	(GMT-05:00) Eastern Time (US & Canada)
"-300a"	(GMT-05:00) Indiana (east)
"-240b"	(GMT-04:00) Atlantic Time (US & Canada)
"-240a"	(GMT-04:00) Caracas, La Paz
"-210a"	(GMT-03:30) Newfoundland
"-180b"	(GMT-03:00) Brasilia
"-180a"	(GMT-03:00) Buenos Aires, Georgetown
"-120a"	(GMT-02:00) Mid-Atlantic
"-60a"	(GMT-01:00) Azores, Cape Verde Is.
"0"	(GMT) Casablanca, Monrovia
"0a"	(GMT) Dublin, Edinburgh, Lisbon, London
"60a"	(GMT+01:00) Amsterdam, Berlin, Bern, Rome, Stockholm, Vienna
"60b"	(GMT+01:00) Belgrade, Bratislava, Budapest, Ljubljana, Prague
"60c"	(GMT+01:00) Brussels, Copenhagen, Madrid, Paris, Vilnius
"60d"	(GMT+01:00) Sarajevo, Skopje, Sofia, Warsaw, Zagreb
"120a"	(GMT+02:00) Athens, Bucharest, Cairo, Istanbul, Minsk
"120b"	(GMT+02:00) Harare, Helsinki, Jerusalem, Pretoria, Riga, Tallinn



String	Meaning
"180a"	(GMT+03:00) Baghdad, Kuwait, Riyadh
"180b"	(GMT+03:00) Moscow, St. Petersburg, Volgograd
"210a"	(GMT+03:30) Tehran
"240a"	(GMT+04:00) Abu Dhabi, Baku, Muscat, Tbilisi
"270a"	(GMT+04:30) Kabul
"300a"	(GMT+05:00) Ekaterinburg, Islamabad, Karachi, Tashkent
"330a"	(GMT+05:30) New Delhi
"360a"	(GMT+06:00) Astana, Almaty, Colombo, Dhaka
"420a"	(GMT+07:00) Bangkok, Hanoi, Jakarta
"480a"	(GMT+08:00) Beijing, Hong Kong, Singapore, Taipei
"540a"	(GMT+09:00) Seoul, Tokyo, Yakutsk
"570a"	(GMT+09:30) Adelaide, Darwin
"600a"	(GMT+10:00) Canberra, Guam, Port Moresby, Vladivostok
"660a"	(GMT+11:00) Magadan, Solomon Islands
"720a"	(GMT+12:00) Fiji, Kamchatka, Marshall Islands, Wellington

## Administrator Settings

The administrator section contains the username and password of the administrative user.

### *system.administrator.username*

- This is the username used to log onto the system via telnet, http or https.
  - Data type – String
  - Default value – “admin”
  - Acceptable values – Any

### *system.administrator.password*

- This is the password used to log onto the system via telnet, http or https. The password must be in plain-text in this XML file. (It is stored encoded on the device.)
  - Data type – String
  - Default value – “admin”
  - Acceptable values – Any

## Network

### WAN

The “WAN” settings control how the WAN interface is configured, including IP address and connectivity settings.

#### *network.wan.mode*

- This setting controls how the WAN interface’s IP address should be configured, using a static address or broadcasting for a DHCP address
  - Data type – String
  - Default value – “Static”
  - Acceptable values
    - “DHCP”
    - “Static”

#### *network.wan.host*

- The name to report as a hostname for services that request this information, such as DHCP or DNS.
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any

#### *network.wan.domain*

- The domain name to use for computing incomplete DNS searches.
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any

## Static Addressing

The WAN interface can be set to a static IP address, for which multiple settings are required for full connectivity. **NOTE: `network.wan.mode` value must be set to "Static" for the following elements to take effect.**

### *`network.wan.static.address`*

- The IP address to use when the WAN interface is configured with a static IP address.
  - Data type – String
  - Default value – "0.0.0.0"
  - Acceptable values – Any (no whitespace)

### *`network.wan.static.mask`*

- The subnet mask to use when the WAN interface is configured with a static IP address.
  - Data type – String
  - Default value – "255.255.0.0"
  - Acceptable values – Any (no whitespace)

### *`network.wan.static.gateway`*

- The IP address of the gateway router to use when the WAN interface is configured with a static IP address.
  - Data type – String
  - Default value – "0.0.0.0"
  - Acceptable values – Any (no whitespace)

### *network.wan.static.dns.primary*

- The primary DNS server (IP Address) to use when the WAN interface is configured with a static IP address.
  - Data type – String
  - Default value – “0.0.0.0”
  - Acceptable values – Any (no whitespace)

### *network.wan.static.dns.secondary*

- The secondary DNS server (IP Address) to use when the WAN interface is configured with a static IP address.
  - Data type – String
  - Default value – “0.0.0.0”
  - Acceptable values – Any (no whitespace)

### *network.wan.static.dns.tertiary*

- The tertiary DNS server (IP Address) to use when the WAN interface is configured with a static IP address.
  - Data type – String
  - Default value – “0.0.0.0”
  - Acceptable values – Any (no whitespace)

## SNMP

The SNMP section controls global SNMP parameters and system variables.

### *network.snmp.sys\_contact*

- The system contact person. This is equivalent to “sysContact” from RFC 1213, which it describes as “the textual identification of the contact person for this managed node, together with information on how to contact this person.”
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any (should be  $\leq 255$  characters)

### *network.snmp.sys\_name*

- The system name. This is equivalent to “sysName” from RFC 1213, which it describes as “an administratively-assigned name for this managed node. By convention, this is the node’s fully-qualified domain name.”
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any (should be  $\leq 255$  characters)

### *network.snmp.sys\_location*

- The system location. This is equivalent to “sysLocation” from RFC 1213, which it describes as “the physical location of this node (e.g., ‘telephone closet, 3rd floor’).”
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any (should be  $\leq 255$  characters)

## VoIP

VoIP accounts include both SIP and InformaCast accounts. Room 1 InformaCast is designated as Account[0], Room 1 SIP as Account[1], Room 2 InformaCast as Account[2] and Room 2 SIP as Account[3]. All notations below refer to Account[x].

Enter desired values and settings for each room individually.

### InformaCast Accounts

voip.accounts[0] = Room 1 InformaCast

voip.accounts[2] = Room 2 InformaCast

#### *voip.accounts[x].enabled*

- When an account is enabled, it may be used to receive InformaCast broadcasts. When disabled, the account's settings are retained and may be edited, but the account cannot be used.
  - Data type – Boolean
  - Default value – “true”
  - Acceptable values
    - “true”
    - “false”

#### *voip.accounts[x].informacast.max\_streams*

- Maximum number of audio broadcasts to play simultaneously. To disable audio mixing, set this value to “1”.
  - Data type – Single integer
  - Default value – “3”
  - Acceptable values
    - “1”
    - “2”
    - “3”

## SIP Accounts

voip.accounts[1] = Room 1 SIP

voip.accounts[3] = Room 2 SIP

### *voip.accounts[x].enabled*

- When an account is enabled, it may be used to make and receive SIP calls. When disabled, the account's settings are retained and may be edited, but the account cannot be used.
  - Data type – Boolean
  - Default value – “true”
  - Acceptable values
    - “true”
    - “false”

### *voip.accounts[x].user*

- Telephone extension or user ID associated with the account, e.g., “jdoe” or “123”.
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any (no whitespace)

### *voip.accounts[x].name*

- Friendly name of the user, e.g., “Jane Doe” or “Extension 123”.
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any



### *voip.accounts[x].sip.domain*

- Specifies the Internet domain (either a domain/hostname or IP address) where the account's username (voip.accounts[x].user) resides.
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any (no whitespace)

### *voip.accounts[x].sip.register*

- Determines whether or not the account will register with a server to send or receive SIP calls. If set to "false", the account will operate in peer-to-peer (P2P) mode. **NOTE: This value must be the *opposite* value of that listed for *voip.accounts[x].sip.loose\_uri\_matching.username* (below).**
  - Data type – Boolean
  - Default value – "true"
  - Acceptable values
    - "true"
    - "false"

### *voip.accounts[x].sip.loose\_uri\_matching.username*

- If the SIP account is set to loosely match the username, it means that any request sent to the device where the hostname is a match will be handled by the device. If an account exists that exactly matches the username, it will handle the request, otherwise the account with loosely matching username will handle the request. **NOTE: This value must be the *opposite* value of that listed for *voip.accounts[x].sip.register* (above).**
  - Data type – Boolean
  - Default value – "false"
  - Acceptable values
    - "true"
    - "false"

### ***voip.accounts[x].sip.local\_port***

- Specifies the network port on which the account listens for SIP messages. If set to 0, the default port (5060) is assumed.
  - Data type – Unsigned 16-bit integer
  - Default value – “0” (automatic)
  - Acceptable values – 0 to 65535

### ***voip.accounts[x].sip.transport***

- Specifies the transport protocol to use for this account’s network traffic. The default setting of “auto” generally results in unencrypted UDP.
  - Data type – String
  - Default value – “auto”
  - Acceptable values
    - “auto”
    - “udp”
    - “tcp”
    - “tls”

### ***voip.accounts[x].sip.authentication.username***

- If the SIP server for this account requires authentication, this username value is provided to the server as a credential.
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any

### ***voip.accounts[x].sip.authentication.password***

- If the SIP server for this account requires authentication, this password value is provided to the server as a credential. The password must be in plain-text in this XML file. (It is stored encoded on the device.)
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any

## Room Mode

Configure your intercom for single room or two-room operation and configure panic button functionality.

### *gemini.mode*

- Configures speaker mode for 1 room / 1 speaker, 1 room / 2 speakers, or 2 room mode.
  - Data type – String
  - Default value – “1room\_1speaker”
  - Acceptable values
    - “1room\_1speaker”
    - “1room\_2speakers”
    - “2rooms”

### *gemini.buttons.panic.short\_press.uri*

- SIP phone number to call when the panic button is pressed for less than two seconds.
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any (no whitespace)

### *gemini.buttons.panic.long\_press.uri*

- SIP phone number to call when the panic button is pressed for two seconds or longer.
  - Data type – String
  - Default value – Empty string
  - Acceptable values – Any (no whitespace)

If, for any reason, your speaker does not properly reboot or you cannot access it through your browser, you can simply reopen the configuration file in the InformaCast server and follow steps 1-4 in [Getting Started](#) to re-edit. If you still have problems, you can erase all of the elements you've added and replace the code with the following block, *replacing the InformaCast server IP address with your own*:

```
<InformaCastSpeakerConfiguration>

  <Servers>
    <InformaCast url="http://123.456.78.91:8081/InformaCast/admin?cmd=spkr"/>
  </Servers>

  <!--
  <Firmware file="firmwares/bernoulli_romulus_secure_0_17_1_20160308.bin" />
  -->

  <wah:X_deviceFlatConfig xmlns:wah="urn:schemas-wahsega-com:DeviceFlatConfig-1-0">

  </wah:X_deviceFlatConfig>

</InformaCastSpeakerConfiguration>
```

Reboot your speaker once again, waiting at least one minute for all changes to take effect.

You can also restore your speaker to factory default settings, following the instructions in Appendix A of the [InformaCast Speaker User's Guide](#).

For further support, contact Wahsega at 888.509.2379 or [support@wahsega.com](mailto:support@wahsega.com).