

Sage Alerting Systems
Digital ENDEC
Firmware Revision 1.1/89
Document updated June 20, 2012

Release notes for version 89

This version supports the IPAWS server. If you have not already installed version 88, you may skip the next paragraph and go directly to the Quick Installation Steps.

This version fixes a problem setting DNS addresses that appeared in version 88. If you have already installed version 88, see the section on differences between version 88 and 89 later in this document. You can install this version on top of version 88, but you only need to if you have to change the DNS address on your static IP addressed ENDEC. If your ENDEC is successfully polling the IPAWS server, you do not need to rush to update it with this version.

These release notes will be updated throughout June. If you find yourself waiting for tech support to get back to you, check www.sagealertingsystems.com for updates.

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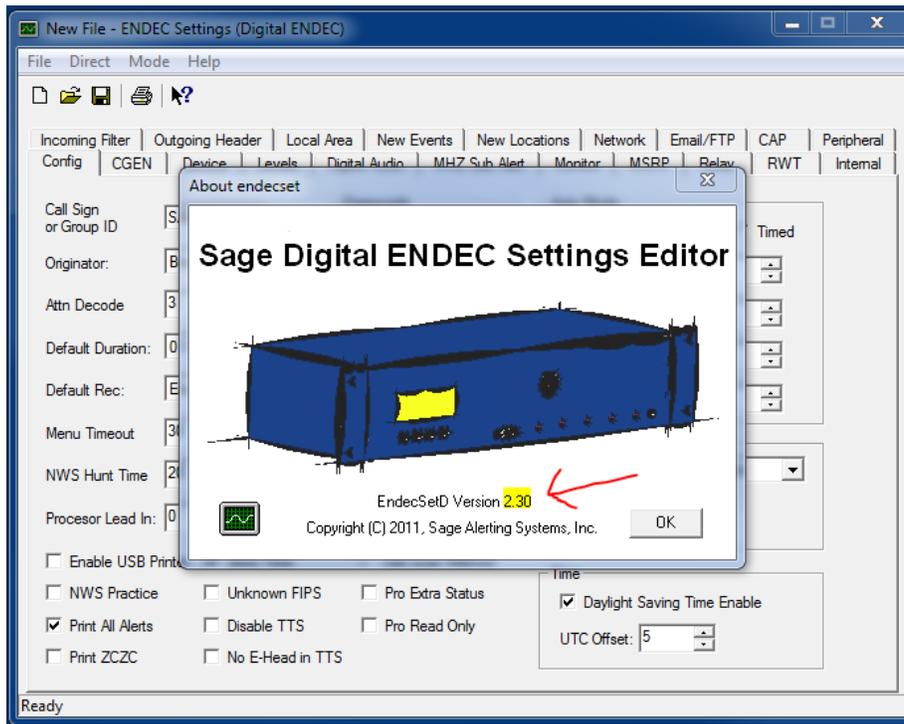
1 Quick Installation Steps

Here are the steps you need to bring up the new release and get it polling the IPAWS server. These instructions assume that you have previously set up the ENDEC and know how to upload firmware. If you have not, or do not, please refer to <http://www.sagealertingsystems.com/task/SageSetup.pdf>

Summary: In this procedure, you will download and update the ENDECSetD program, download and install the new firmware, and verify that the IPAWS server is being polled. If this is the first time (for first time in a while) that you've accessed your ENDEC from the web page, the default user name is admin, and the default password is admin. You should change this from the default during your installation.

Step 1. Download and install version 2.30 of the ENDECSET program. Get it from www.sagealertingsystems.com/release1-1/endecsetd.msi

Step 2. Verify that you have downloaded and installed version 2.30 of ENDECSetD. Start ENDECSetD. Use the Help menu, then About to see the version. It must say version 2.30.



Step 3. Have you tried to put in the CAP server address before now? Some users will have tried to enter an address, perhaps from another vendor's web site, newsletter, blog, forum, or mail list. Prior to this public release, it was not possible on any other public release to connect the ENDEC to the IPAWS server. Any steps you took to try to do so could make the ENDEC's automatic installation of the IPAWS server fail, or the CAP Status will not say OK as the ENDEC tries to connect to these incorrect server entries. If you have tried in the past to connect your ENDEC to IPAWS by building CAP server entries, you need to remove them now. Please see removing old server entries later in this document.

Step 4. Download the firmware update file from here:

<http://www.sagealertingsystems.com/release1-1/89.x>

Step 5. Install this release by using the Upload Firmware button on the ENDEC's home page. You can use the flash stick method if you don't have LAN access, but if your ENDEC isn't connected to the LAN, it won't be able to access IPAWS and you won't be able to troubleshoot any connection problems. You must have LAN access for a complete test and installation of IPAWS CAP server polling.

Step 6. This release will take about three minutes to upload, install, reboot, and come up again.

Step 7. Use your browser refresh button to make sure you are seeing a new copy of the ENDEC's home page.

Step 8. Verify that the ENDEC is polling IPAWS. From the ENDEC's home page, you should see

ENDEC Status: Online CAP Status: OK

You might see these other words after "CAP Status":

Startup – Wait for 30 seconds for the ENDEC to gather status information.

Offline – One or more of your CAP servers is not polling properly. Click the "tools" button on the left hand side of the ENDEC's home page to see more information. If you don't see the tools button, refresh the web page with your browser's refresh button.

No CAP defined – You have no CAP servers defined in your settings. The ENDEC will normally build one for you, but if you upload an old settings file that had no servers, you'll see this. You'll need to update your settings file manually.

Step 9. Detailed status information is available with the "tools" button, on the left hand side of the ENDEC's home page. You will see the default "CAP" display, which can be refreshed by clicking the CAP button. You should see something like this:

The IPAWS poller is Up

IPAWS is Up, 3 good polls, 0 failed polls, 0 alerts, 0 skipped, 0 accepted.

If you don't, refer to the troubleshooting section below.

Step 10. The ENDEC has now been updated to the latest version, and has updated your settings file with the IPAWS server information. You must now download the settings file with the retrieve settings button on the left of the ENDEC's home page. Use this settings file in the future. If you upload an old settings file after the ENDEC built the IPAWS server for you, the ENDEC will not attempt to build it again. You can easily build the IPAWS server manually, refer to the manual installation instructions "Adding the IPAWS Server Manually."

2 Removing CAP servers

In most cases, you will only have two or three CAP servers, the IPAWS server, and a state server. You might also have a GSS satellite server. You might have tried to build a CAP server yourself in the days before Sage released its IPAWS support. Those entries must be removed, otherwise you will get CAP offline messages as the ENDEC tries to use those incorrect entries.

Retrieve your settings file from the ENDEC. Use the 2.30 version of ENDECSetD, and use the CAP tab to remove all but the correct server entries.

If you are a MyState user, keep the MyState servers with a server type of Type 1.

If you are a GSS user, keep the GSS servers with a server type of GSS Satellite

If you have any IPAWS server attempts with a Server Type of anything other than IPAWS OPEN, delete them with the “Delete this server” button.

Remove any servers with a type of IPAWS OPEN that have anything other than exactly this in the Server Base URL field:

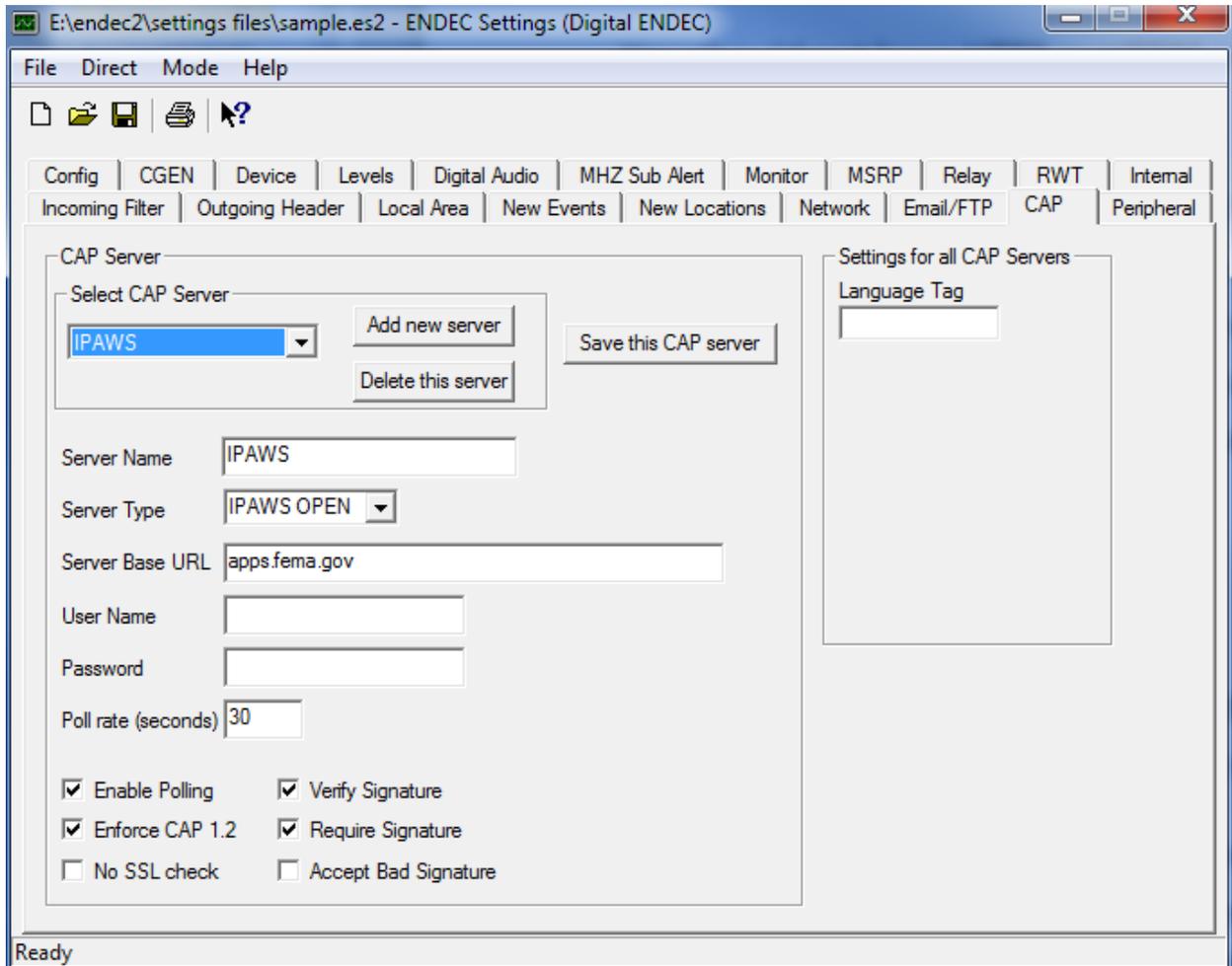
apps.fema.gov

You should not have HTTP or HTTPS in the server base URL.

Upload your settings file, or add the IPAWS cap server manually as shown below.

3 Adding the IPAWS Server Manually

- 1) Download your settings from the ENDEC. Make sure you are using version 2.30 of ENDECSetD.
- 2) Make sure you remove any incorrect server entries, see Removing CAP servers.
- 3) Click the “Add new server” button. Use any server name you like, we like “IPAWS”. The figure below shows all of the other items you need to set.



4 Troubleshooting

If you have followed all of the instructions in the quick installation section, and the status on the home page says “CAP Status: Offline”, this section can help you.

Your ENDEC must be able to access the Internet in order to communicate with the FEMA IPAWS server. This means that a valid default gateway and at least one valid DNS server must be accessible to the ENDEC.

There are two major types of problems that will cause an Offline status to show up.

- 1) Your ENDEC can't access the internet.
- 2) Your IPAWS cap server isn't defined properly, or you have extra entries from previous manual attempts to access the IPAWS server.

4.1 CAP Server configuration problems.

The ENDEC does allow for a certain number of missed polls due to slow Internet, temporary dropouts, problems at the server end, etc. The offline status, blinking LEDs, email, all have various delays built in so that you are not bothered by transients.

If you see “CAP Status: Offline” displayed at the top of the Home page of the web interface, click the tools button on the left side of the ENDEC's home page.

The top section, for example, “the IPAWS poller is up” means the internal software is responding properly.

The bottom section gives details about each individual CAP server that you built (or the ENDEC built) with the CAP tab on ENDECSetD.

You should see “servername” is UP, with some statistics. If you see “is Not Polling”, it means the ENDEC is not getting a response from the server. Click the button under Stats for the type of server you want to look at in detail. Click the IPAWS button to see details for the IPAWS server.

Look at the “Last Successful poll” line. If it says “never”, you probably have a CAP server configuration problem, or your internet has always been down. If it has a time, chances are good that your CAP server configuration is ok, but the internet connection to the ENDEC has gone down.

To check for a configuration problem, click the “wget logs” button on the tools page. This will show the status returned from the last poll attempt for a particular CAP server. For IPAWS, you should always see a URL starting with

```
https://apps.fema.gov
```

This is what the ENDEC is using internally, not what you enter on the URL line in the cap settings file. If you see anything else there, especially https://https://apps.fema.gov, it is a bad manual installation of the CAP settings. You'll need to fix the CAP server in your settings file and upload it.

4.2 Internet Problems

Your ENDEC must be able to access the internet in order to communicate with the FEMA IPAWS server. This means that a valid default gateway and at least one valid DNS server must be accessible to the ENDEC. The following indications may mean your ENDEC cannot get to the internet or cannot resolve the address of the IPAWS server:

- Automatic LED blinking and “CAP Server is down” shown in MSG on front panel
- “CAP Status: Offline” displayed at the top of the Home page of the web interface
- “Not polling, last successful poll never” displayed on the Tools page
- Poll count and failed count show equal values on the IPAWS log
- A message such as “failed: no route to host” displayed on the Wget log
- A message such as “failure to resolve host” displayed on the Wget log
- “stratum=16” displayed near the bottom of the Network Diag page
- your ENDEC doesn't keep accurate time
- pinging google.com from the Network Diag screen gives an error or 100% packet loss

If you are using DHCP for your network address type, your DHCP server should have provided correct information. If you have a static network address type, you must provide the correct information.

The addresses you provide for the default gateway and DNS server fields will depend on how your local area network is configured. In many cases, the default gateway and DNS server addresses are the same as the internal address of your router. If you're not sure, consult your IT folks. You can also try the information from other computers on your LAN that can access the Internet. From a Windows computer on the same network segment as your ENDEC, open a command prompt and type:

```
ipconfig /all
```

Then, look for lines similar to these:

```
Ethernet adapter Local Area Connection:  
Connection-specific DNS Suffix . . :  
Description . . . . . : Realtek PCIe GBE Family Controller  
Physical Address. . . . . : 00-12-34-56-78-90  
DHCP Enabled. . . . . : No  
Autoconfiguration Enabled . . . . : Yes  
IPv4 Address. . . . . : 192.168.10.101(Preferred)  
Subnet Mask . . . . . : 255.255.255.0  
Default Gateway . . . . . : 192.168.10.1  
DNS Servers . . . . . : 192.168.10.1
```

Use the default gateway and DNS server addresses shown in those lines (don't use the exact ones shown in this document; this is merely an example, and yours will likely be different).

5 Differences between version 88 and 89

Version 88 had a problem changing DNS address for static IP address types. The changes could be made in ENDECSetD and from the front panel, but they would not take effect. The DNS addresses would be stuck on whatever they were set to prior to loading version 88. The “network diag” web page will always show the actual DNS address(es) in use.

This version supports the IPAWS server. All installation instructions are otherwise the same. If you install version 89 over 88, all of your settings will remain, including any CAP servers. To have any DNS settings that had previously been ignored now take effect, you will need to load the settings file to the ENDEC again. Make sure it is the version that includes your CAP servers.

- If you use a static IP address for your ENDEC and have already installed version 88, and you need to change the DNS address, you can install this version.
- If you have not yet installed version 88, install this version.
- If you use DHCP, or do not plan to change your DNS address(es) you can defer loading this version until you do want to change the DNS address.

Other changes

- Fixed a problem loading the levels table if the browser is IE, but the user has not loaded the activeX control from <http://www.sagealertingsystems.com/support-pc.htm>.
- Fixed labeling in the levels text table, Input Peak and Average Peak are in dBFS.
- Fixed a display issue playing from the log web page in firefox.

6 Changes from Version 1.0h/74

New Features

CAP

- Added support for the IPAWS server type.
- Added multiple servers for MyState (server type is Type 1).
- Added tools page, giving a summary of CAP polling activity as well as details. Use the CAP button to show a summary. Use the other buttons under the “Stats” heading to show details on a particular server. The logs buttons will give the error messages from various activities, often giving the necessary clues to correct configuration errors or to detect DNS or gateway issues. Refer to the troubleshooting notes for details.
- Automatic alerts with TTS start more quickly.
- Added "fromcap" as receiving callsign for CAP messages, as they do not have EAS call signs.
- Added server name to logged CAP messages.
- The auto led on the front panel will flash when a CAP server is down. The blinking auto light can be cleared from the front panel TEST.RESET BLINK ERROR menu.
- A message is sent to front panel message buffer when the CAP polling state changes.

- Email is sent to the “error addresses” list when CAP polling status changes. To avoid constant messages when the CAP status is bouncing up and down, the warning system will ignore transitions that occur within a five minute interval, that is, the system must remain in a state for five minutes before you get an email, or the lights blink. Use the tools page to get immediate feedback on cap polling status.
- Ignored alerts from CAP are not logged, reducing entries in the log by hundreds a day.
- Replaced the Enable TTS option on the config tab and config menu with “Disable TTS”. This allows new stations to install new firmware without having to enable TTS. Stations that installed version 74-2 during the few days when TTS was not permitted by part 11, and enabled TTS do not need to take any action. Stations that disabled TTS (few, if any), will need to check the Disable TTS box. As of June, 2012, the FCC permits the use of TTS.

EAS

- Improved ATTN threshold. The ATTN threshold sets the detection threshold for received two tone ATTN signal. When the ENDEC detects those tones, it removes them from the audio recording of the alert. In the past, with low signal levels, requiring a low setting of threshold, the system became more sensitive to noise. This would keep a low threshold from being effective in some cases. The attn. detection now performs better with low thresholds, which can now be set as low as 5 if needed. If playback of the audio log from an alert contains an attention tone as a level lower than the speech portion of the recording, set your attention threshold lower.
- The ENDEC will limit its ATTN detection window to 11 seconds. If an attention tone is longer than that, or is being falsely detected, the alert recording will start anyway. This should solve occasional reports of no audio in relayed alerts.

System

- Added email test button (on tools page).
- Added ping and polling to the automation interface.
- Added check boxes on log page, selecting only sent alerts, only alerts that didn't come from CAP, only required alerts (EAS/EAT, RMT, RWT).
- Added colored backgrounds and other readability changes to the log page.
- Added zczc string to xml log dump format.
- Better support for a wider range of web browsers, play feature on Log and Stream. If activeX is not available, the Show Input Levels button goes to the tools/levels display, a tabular presentation of the level data.
- Added tools/level button. The output level of the XLR analog output is shown. The level can be adjusted with the monitor input gain, record, and playback settings to give the desired output level. Not that this requires a conversion from dbFS in the digital recording of the alert audio to dBu, which is done for the specifics of the ENDEC hardware.
- Added tools page, with easy access to logs, cap polling status, and a button to generate a test email.
- The title of the ENDEC's home page is now “ENDEC <call sign>”, this will allow the tab of multi-tabbed browsers to show the call sign, giving easier access when multiple ENDECs are displayed.
- Added Clear Led Sign button to home page. (added in 74-1).

Fixes

- Fixed “ignored alert” problem that would stop email from being generated if there were ignored alerts. If you expanded your others filter to capture more messages so that you would not have ignored alert, you should narrow it again. You will get many CAP messages that you don’t otherwise want. “Ignored” CAP messages are not logged, CAP will only log messages that match a specific filter.
- Fixed front panel display of "show input levels" to use the full line length.
- Fixed bug where TTS would occasionally not play.
- Fixed pend.cue on the front panel to play the TTS audio if present and TTS is allowed.
- Added date Generated element to XML log file, showing the date the file was built (not just the start/end of the data in the file).
- Fixed, the timer for timed relay and timed ignore alert, if they came from CAP, had an extra ten minutes added.
- Fixed handle leak, limiting number of logged CAP alerts to 750 without a reboot.
- Fixed front panel clear log menu. Note: the front panel log is present for compatibility with the older ENDEC. The web page log should be used instead. There is no way to clear the log used by the browser interface.
- Fixed: TimedRWT - sends alert a day early if the alert is scheduled after midnight UTC. The Timed RWT feature is deprecated, the "Random RWT" feature should be used instead. If you use TimedRWT, and have made allowances for the error by adjusting your day back by one, you will now need to add the proper date.
- Fixed a bug that caused iBiquity messages to be processed for disabled servers. If you have a cap server type of iBiquity, you now need to check the "enable polling" box.
- Documented: to restore the ENDEC to factory default, power up while holding buttons ENTER, DOWN, UP on the front panel. Continue to hold until the ENDEC has booted, or it says “release” on the front panel.
- Fixed: One second of silence is added before internally generated TTS to give proper spacing after the attention signal.
- The streaming audio levels were one half of the levels used by the alert recorder. This is fixed, allowing the stream quality to more closely match the recorded alert quality.
- Removed Governors Must Carry feature. The GOVMUSTCARRY filter is now ignored.
- Fixed handling of an automatic relay alert when a 2nd set of headers arrives on the same input as the active alert. The 2nd set of headers terminates the alert in progress. If a single header arrives, it is ignored.
- Improved handling of the Abort or End button for automatic alerts, these buttons will now always terminate the alert cleanly.

Known problems.

- If you change an Incoming Filter or the Local Area from the front panel, you must reboot the ENDEC to have the changes take effect for CAP alerts.