**PureConnect®**

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See Change Log for summary of changes.

# GENESYS

# E911

# Technical Reference

## Abstract

This document describes configuring CIC for Enhanced 911 (E911) service, which enables call to emergency services.

For the latest version of this document, see the PureConnect Documentation Library at: http://help.genesys.com/pureconnect.

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# Overview of E911 integration for CIC

To allow North American customers to comply with emergency service number (E911) regulations implemented in some states and areas, Customer Interaction Center (CIC) provides a new mechanism for E911 functionality. The E911 feature sends the Media Access Control (MAC) and IP address of a managed station that dials 911 through a CIC client application to a third-party E911 service provider. The E911 service provider can associate those addresses to an Automatic Location Information (ALI) record provided previously and forward it to the correct Public Safety Answering Point (PSAP) to answer.

For PureConnect Cloud customers, contact Genesys to determine availability and usage of the E911 feature for your organization.

After you configure your dial plan, subscribe to an E911 service, and provide ALI records to the service provider, the following occurs when users place emergency calls:

1. The CIC server populates the `ININAttr` attribute in the Session Initiation Protocol (SIP) `INVITE` header with the identifying addresses of the station and routes the call to the E911 service provider.

```
INVITE SIP:0123456789@192.168.1.100:5060 SIP/2.0
To: "Unknown" SIP:0123456789@192.168.1.100:5060
From: <SIP:username@example.com:5060<;tag=xtkOlcy
Via: SIP/2.0/UDP 192.168.1.123;branch=z9hG4bKf5lUsts4qxOgs5cxhlAl
Call-ID: 5555ae5fbbd6c537cecf0c4be4444adc@192.168.1.123
CSeq: 1 INVITE
Contact: SIP:username@example.com
Max-Forwards: 70
x-inin-crn: 2001499000;loc=Loc1;ms=ms1.example.com
Supported: join, replaces, 100rel
User-Agent: ININ-TsServer/16.3.0.354
ININAttr: "uu_StationMacAddress=0004f215c285;uu_StationIPAddress=192.168.1.4"
Allow: ACK, BYE, CANCEL, INFO, INVITE, NOTIFY, OPTIONS, PRACK, REFER, SUBSCRIBE,




UPDATE
Accept: application/sdp
Accept-Encoding: identity
Content-Type: application/sdp
Content-Length: 199
```

2. The E911 service provider reads the identification information for the station making the emergency call.
3. The E911 service provider retrieves the ALI record submitted previously for that station.
4. The E911 service provider determines the correct PSAP that services the location.
5. The E911 service provider sends the ALI record and routes the SIP call to the PSAP.
6. The PSAP receives the SIP call with the ALI record and communication between the PSAP and the caller begins.

> **Important!**
> Some states and areas impose fines for emergency calls that do not provide accurate location information. Check applicable regulations for any state or area for which your CIC server provides SIP telephony. Ensure that you provide complete information so that emergency response personnel can find the location where the call originated.
>
> Some organizations have buildings in different response jurisdictions or municipalities. In this situation, it is important that the MLTS operator (CIC administrator) contacts the PSAP manager or director in advance for the location that contains the MLTS switch. In some cases, PSAPs dispatch for a number of jurisdictions and the CIC server can route calls to a single PSAP. In other cases, the CIC server may need to route calls to different PSAPs service different jurisdictions, which requires more configuration and testing.
>
> The Federal Communications Commission (FCC) maintains a 911 Master PSAP Registry that you can download and view at the following website: https://www.fcc.gov/general/9-1-1-master-psap-registry
>
> National Emergency Number Association (NENA) is the organization for defining and maintaining standards regarding communications to emergency services, including Enhanced 911 (E911).
>
> For more information about E911 regulations and standards for the United States of America, see http://www.nena.org.

**Caution!**
This functionality is only for E911 calls placed on managed stations through a CIC client interface, such as Interaction Desktop and Interaction Connect. Direct dialing of the emergency number on a IP telephone does not include the station addresses in the SIP `INVITE` message for emergency calls.

If you defined remote workstations for mobile devices, do not use this E911 feature. Instead, each user of a mobile device must use the native functionality of the device to contact the PSAP for its current location and provide location information.

# Configuring E911 for CIC

## Requirements

- CIC 2017 R1 or later
- A third-party E911 service provider
- A CIC client, such as Interaction Connect, for each managed station

## Process

1. Establish a relationship with a third-party E911 service provider.
2. Ensure that a CIC client, such as Interaction Connect, is available on all computers that you want to have the E911 feature.
3. Do the following to enable the E911 feature to identify the station to the E911 service provider:
   a. Log on to Interaction Administrator.
   b. In the left pane, expand the container for your CIC server and then click the **Server Parameters** item.
   c. In the right pane, right-click and then click **New** from the resulting shortcut menu.
   d. In the **Enter Parameter Name** box, type `Include Station Mac And IP In SIP` and then click **OK**.
   e. In the **Parameter Value** box, type `True` and then click **OK**.

   > **Note:** If not enabled, the E911 feature does not include addresses in the SIP `INVITE` to identify the station to the E911 service provider and the E911 service provider cannot associate an ALI record with the call for routing to the appropriate PSAP.

4. Work with the E911 service provider to determine what fields it requires in ALI records and notify the E911 service provider of the `ININAttr` attribute in the SIP `INVITE` header.

   To ensure that emergency responders can find the location accurately and quickly where an emergency call originated, gather the following information manually for each managed station:
   - Street address of the building where the call originated
   - Unique building identifier, if applicable
   - Floor of the building where the call originated, if applicable
   - Location of the station on the floor of the building, such as *NE corner* or an office number

   > **Important!**
   > Use names that are posted clearly on signs at the facility. Do not use slang, unofficial, or non-posted names only persons familiar with the facility use. Ensure that persons visiting the facility for the first time can interpret identifiers and locations easily.

5. In Interaction Administrator, ensure that you define and enable all managed stations for which to enable the E911 feature. For more information about configuring managed stations, see "Managed IP Phones" in the *Interaction Administrator Help*.
6. Run the E911 Phone Export Utility on the CIC server. For more information about running the E911 Phone Export Utility, see E911 Phone Export Utility.
7. In the resulting export file, add the location fields that your E911 service provider requires and the specific data for each managed station.
8. Provide the file to the E911 service provider.
9. Modify the CIC dial plan to route calls dialing the emergency number (911) to the third-party E911 service provider.

   > **Note:**
   > For more information about configuring a regional emergency number in your CIC dial plan, see *Set up an emergency classification* in the *Interaction Administrator Help*.

10. Test the E911 feature of CIC with the E911 service provider and verify the following:

    - E911 service provider receives the correct station identification information in SIP `INVITE` message headers.
    - E911 service provider can find and retrieve the correct ALI record for the calling station.
    - ALI records for all managed stations meet the requirements for your associated regions and PSAPs.
    - ALI records have the correct location information for each managed station so that the E911 service provider can route calls for each station to its correct PSAP.

# E911 Phone Export Utility

E911 Phone Export Utility, `E911ExportUtility.exe`, is a command-line utility that you run on the CIC server to export to a file the addresses of all defined managed stations.

## Prerequisites

- The user account with which you run `E911ExportUtility.exe` must have the following characteristics:
  - **Read** and **Write** permissions for the `Server` directory, relative to the installation path of the CIC server. The default installation path is `D:\I3\IC\Server`.
  - CIC **Access Rights** that allow retrieval of data for managed phones on the CIC server.
- If you use remote stations, ensure that you specified the original outbound ANI of the remote device to ensure that CIC routes Emergency calls to the correct PSAP.
- Communicate with the E911 service provider to establish clear requirements for ALI records, station information, and station locations. Ensure that you provide correct and necessary E911 information so that delivery to the appropriate PSAP for a station is successful.

## E911 phone export utility installation

The CIC installation or update process places the file, `E911ExportUtility.exe`, in the `D:\I3\IC\Server` directory (default installation path).

**To install the E911 Phone Export Utility**

1. Log on to the CIC server.
2. Do the following:
   a. On your keyboard, press `Windows`+`r`. The **Run** dialog box appears.
   b. In the **Run** dialog box, type `cmd.exe` and then click **OK**.
3. In the **Command Prompt** window, type the following command and then press `Enter`.
   `D:\I3\IC\Server\E911ExportUtility.exe`

   The default installation path for CIC is `D:\I3\IC\`.
4. When requested, type the following information:
   - Host name of the CIC server
   - Credentials of a CIC account that meets the requirements in "Prerequisites."

   The utility retrieves and exports all managed phone configuration data as a new file in CSV format to a new `E911ExportUtility` directory.

   The default path is `D:\I3\IC\Server\E911ExportUtility\`.

> **Note:**
> Subsequent executions of the application reuse the credentials that you provided initially. However, if the credentials fail to authenticate, the utility requests new credentials.
>
> To use different credentials, remove the cached credentials by deleting the `PhoneExportUtilityCreds` file in the `D:\I3\IC\Server` directory.

## Exported data

Each row in the exported CSV file represents a station and contains the fields described in the following table.

| Field | Description |
|---|---|
| DisplayName | Display name of the IP phone. |
| PhoneManufacturer | Manufacturer of the IP telephone associated to the station. For example, AudioCodes, Polycom, and Others. |
| PhoneModel | Model of the IP telephone, such as IP330 or VVX301. |
| NetworkID | MAC address of the managed station. |
| IdentificationAddress | Unique SIP ID address (containing no spaces) for this station appearance. |
| Extension | Numeric internal network identifier of the station. |

> **Note:**
> If the E911 Phone Export Utility cannot acquire data for one or more fields for a station, the corresponding field in the export record for that station is blank.

## Scripting and scheduled tasks

When you run `E911ExportUtility.exe` for the first time, you provide credentials that meet the security requirements in "Prerequisites". The utility stores these credentials so that subsequent usage and scripts that run the utility do not require re-entry of the credentials.

> **Note:**
> If you run `E911ExportUtility.exe` through a script, include the `-autoclose` parameter. The `-autoclose` parameter closes the **Command Prompt** window when the utility finishes its data export. If you do not include the parameter, each time the utility runs, it leaves an open **Command Prompt** window.

# Disable the E911 feature

You can add a server parameter in Interaction Administrator to disable the E911 feature. When disabled, the feature does not include addresses in the SIP `INVITE` to identify the station to the E911 service provider. The E911 service provider cannot associate an ALI record with the call for routing to the appropriate PSAP.

1. Log on to Interaction Administrator.
2. In the left pane, expand the container for your CIC server and then click the **Server Parameters** item.
3. In the right pane, right-click and then click **New** from the resulting shortcut menu.
4. In the **Enter Parameter Name** box, type `Include Station Mac And IP In SIP` and then click **OK**.
5. In the **Parameter Value** box, type `False` and then click **OK**.

# E911 limitations

- Some CIC implementations use Interaction SIP Proxy in remote offices to provide remote survivability when losing connection with the CIC server. In that type of configuration, loss of connectivity to the CIC server causes the E911 feature to stop functioning.
- If you use Interaction SIP Proxy in remote offices as a means to provide remote survivability if connection to the CIC server is lost, the E911 feature does not function if connectivity to the CIC server is lost.
- The E911 feature does not support unmanaged phones or SIP Soft Phone currently.

# Future development for E911 in CIC

Genesys plans to develop more functionality for the E911 feature:

- Support for unmanaged stations
- Support for SIP Soft Phone
- PureConnect Cloud adoptability enhancements

# Change Log

The following table lists the changes to the *E911 Technical Reference* since its initial release.

| Date | Changes |
|---|---|
| 27-September-2016 | Initial release. |
| 11-May-2018 | Rebranded from Interactive Intelligence to Genesys. |
| 13-June-2019 | Reorganized the content only, which included combining some topics and deleting others that just had an introductory sentence such as, "In this section...". |
| 23-July-2019 | <ul><li>Added instructions for enabling the E911 feature to identify stations to the E911 service provider. For more information, see Configuring E911 for CIC.</li><li>Corrected the following exported data definitions:<ul><li>PhoneModel</li><li>NetworkID</li><li>IdentificationAddress</li></ul>For more information, see E911 Phone Export Utility.</li></ul> |