2N IP INTERCOMS & ONGUARD INTEGRATION

Configuration and User Manual

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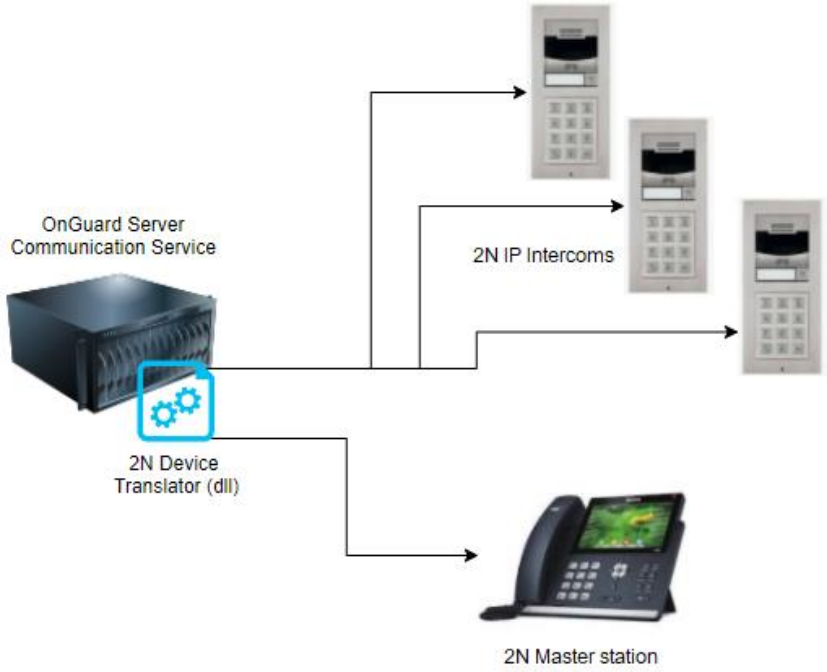
Introduction

2N provides a range of intercom products supporting a flexible deployment with or without a central SIP exchange. This integration with OnGuard access control system allows 2N intercoms to be added to the OnGuard system giving the OnGuard operators the ability to control 2N intercom calls as well as receive 2N intercom events in the OnGuard Monitoring client. The 2N intercom integration also supports OnGuard flexible cause and effect rules via Global I/O linkage.

System overview

The following diagram shows the connectivity between OnGuard communication service and the 2N intercom devices. The 2N translator communicates over REST APIs directly to each device.

The port will depend on the configuration: non-SSL port **80** (http) or SSL port **443** (https) outgoing connection from OnGuard communicating server to the 2N intercoms.



2N Intercom basic configuration and prerequisites

There are several configurations needed to get 2N IP Intercoms working and calling with 2N Master Station.

LAN Connection Setting - 2N IP Intercoms

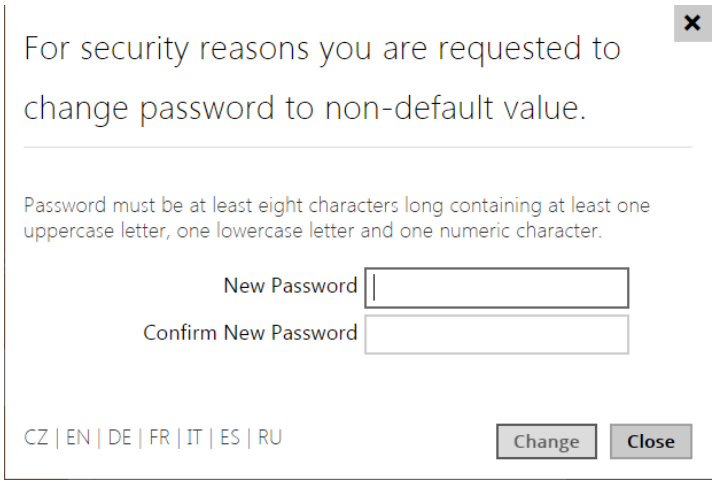
2N IP intercoms **must use static IP addresses** to communicate in direct mode – without the central SIP exchange.

Automatic IP address retrieval from the DHCP server is set by default in the **2N IP Intercoms**. Thus, if connected to a network in which a DHCP server configured to assign IP addresses to all new devices is available, the intercom will obtain an IP address from the DHCP server. The intercom IP address can be found in the DHCP server status (according to the MAC address given on the production plate).

Now enter the intercom IP address into your favourite browser. We recommend you use the latest Chrome, Firefox or Internet Explorer 9+ versions. **2N IP intercom** is not fully compatible with earlier browser versions.

Use the name: admin and password: 2n (i.e., default reset password) for your first login to the configuration interface.

The intercom requires a password change upon the first login. Strong passwords are only accepted - eight characters at least including one capital letter, one small letter and one digit.



Remember the new password well or put it down just in case. Because if you forget the password, you will have to reset the intercom to default values (refer to the Installation Manual of your intercom model) and lose all your current configuration changes.

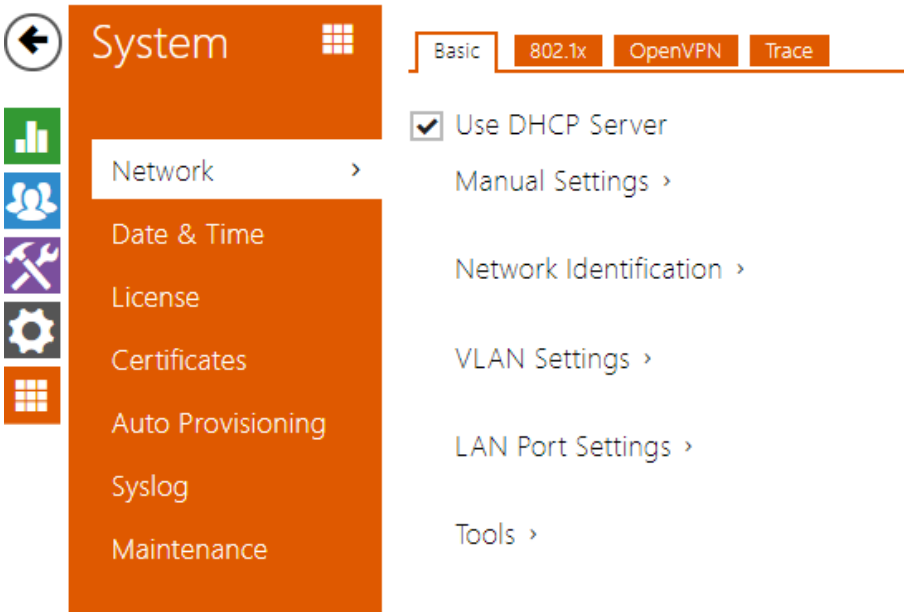
If there is no DHCP server in the network or if you need to find out the IP address of your 2N IP Intercoms you could use free software **2N® IP Network Scanner** which can be downloaded from 2N web.

Or you can use the link below :

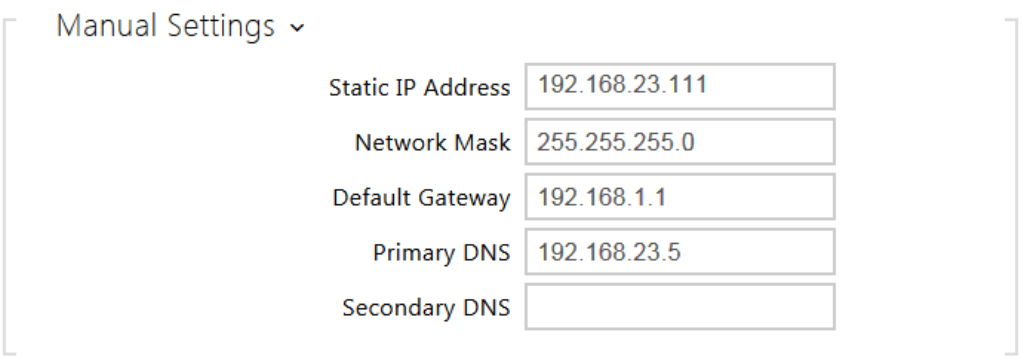
https://www.2n.cz/en_GB/products/2n-network-scanner

If 2N® IP Network Scanner cannot find any 2N IP intercom then please check if your 2N IP intercom is fully booted up and has an access to your network. 2N® IP Network Scanner can even find units that have a static IP address from a different IP address pool than your network is using. You can also change the IP address with the usage of the 2N® IP Network Scanner, just click on the 2N IP intercom with the right mouse button and use Config.

Once in the Weg GUI of the 2N IP Intercom, the IP address is set in section:



Uncheck the “Use DHCP Server” and in “Manual Settings” fill in the desired values according to your network setup, e.g.:



LAN Connection Setting - 2N Master Station

2N Master station is also by default using DHCP for automated network settings. The easiest way to change it is from the device touch screen.

Network Settings:

- Swipe down from the top of the screen to enter the control centre.
- Tap **Settings** → **AdvancedSettings** (default password: 2N or the password you already set using Web Interface) → **Network** → **WAN Port/Wi-Fi Port/VLAN/Web Server/802.1x/VPN/LLDP/CDP/NAT** to configure the network.

Setting calling between 2N IP Intercom and 2N Master Station

If you configure everything according to the following instructions you'll be able to automatically see video preview from intercoms when a call is received on the 2N Master Station as well as activate switches on 2N IP Intercoms which is necessary to rule OnGuard to open the Door. Additionally, you'll be able to call every 2N IP intercom in the same network.

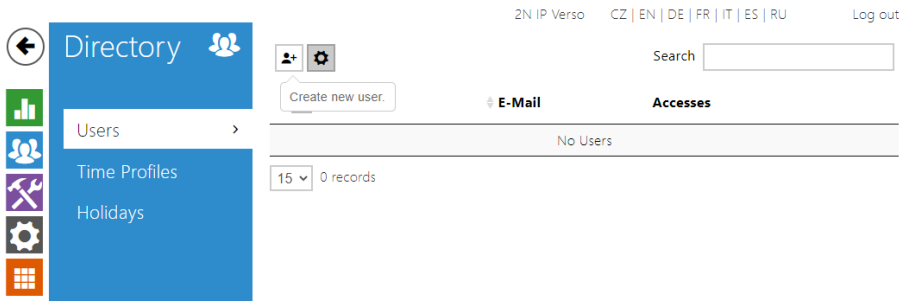
IP addresses used in the example:

- 2N IP Intercoms: 10.27.24.2
- 2N Master Station: 10.27.5.211

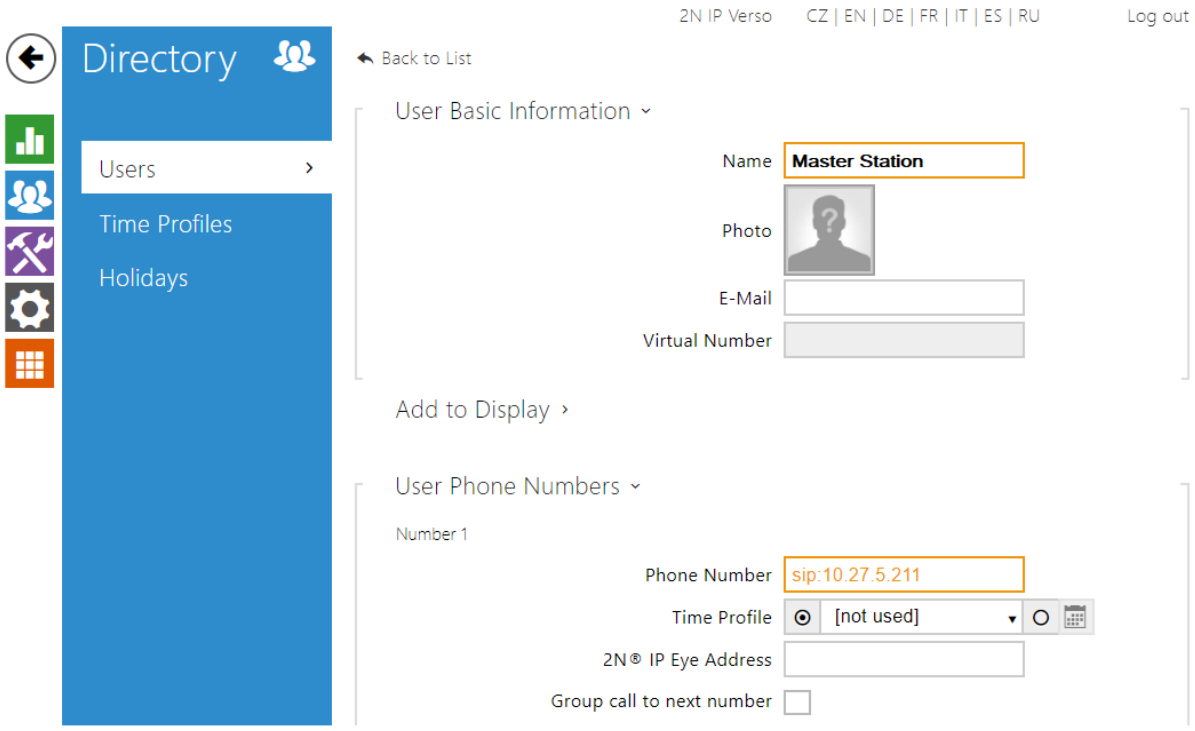
2N IP Intercoms setup

1. After you log in to the intercom, go to Directory.

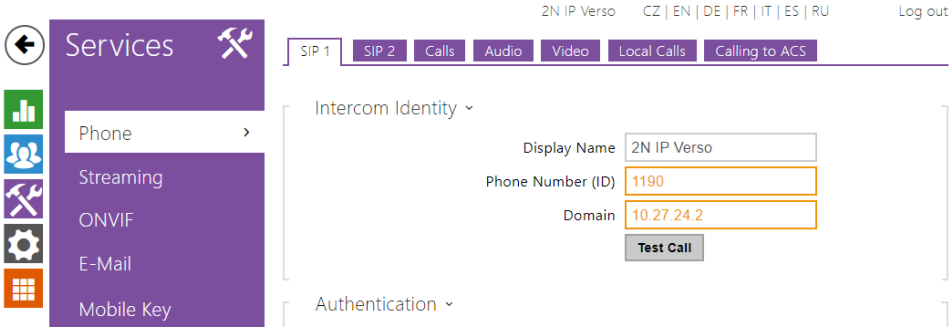
2. Add a new user.



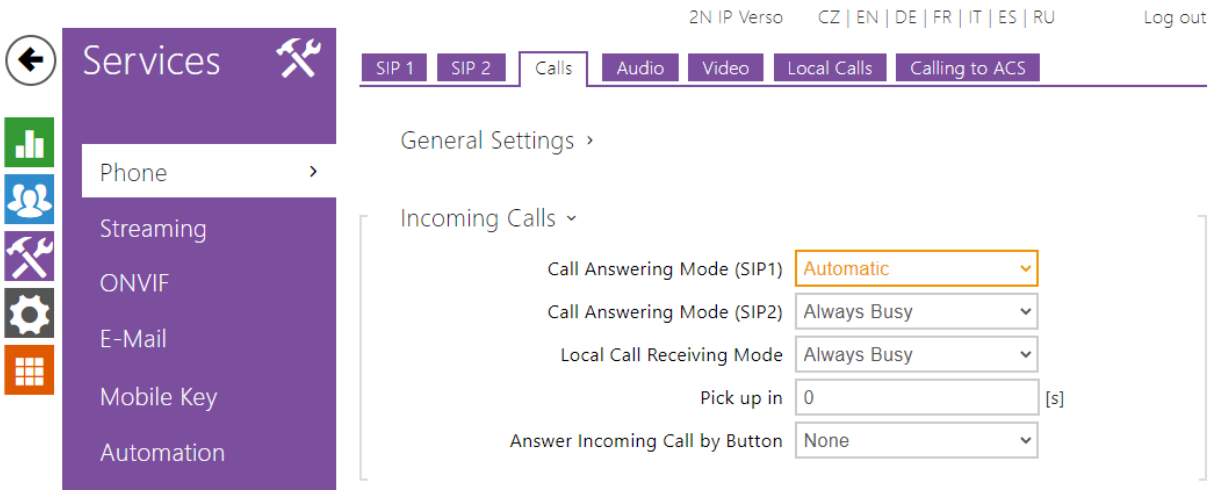
3. Name the user and enter a new phone number in this format: **sip:Master Station IP**. In this case, it's sip:10.27.5.211.



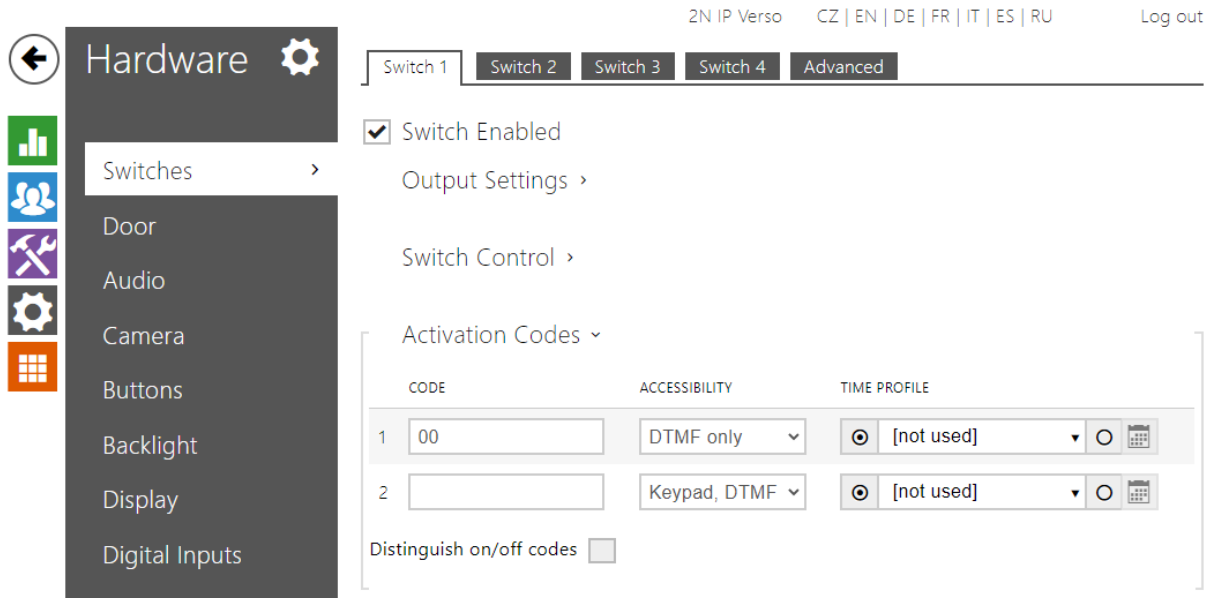
4. The **Phone Number (ID)** field is used to identify the intercom in the **Master Station** as well as in the **OnGuard**. This will allow you to call the intercom directly from the Stations' call log or get a video preview and door unlock button.



5. If you'd like the intercom to pick up calls (from the 2N Master Station) automatically, change Call receiving mode (SIP1) to Automatic.



6. The Master Station offers an "**Open Door**" button function. To use this, you should enter the intercom's **Switch Code** into the Master Station's configuration to open doors without having to enter this switch code manually. Firstly, this code must be defined in the intercom's configuration: Hardware>Switches>Switch#>Switch Codes or in Directory>Users>User#>User Codes.



This code is referred to as "DTMF Code" later on in this manual.

2N Master Station setup

1. Configuration of the 2N Master Station is very straightforward. Pick one of the Door Phones from the Door Phone List and set it as follows:

Device Type: **2N**

Display Name: according to your preference

Phone Number: **intercom's Phone Number (ID)** – as configured above)

Unlock PIN: e.g. **00* – Don't forget the asterisk**. This PIN must be a valid code set in your intercom Switch settings.

Full Screen: Disabled

Send Audio: Enabled

Send Video: Enabled

Video Preview: **Enabled**

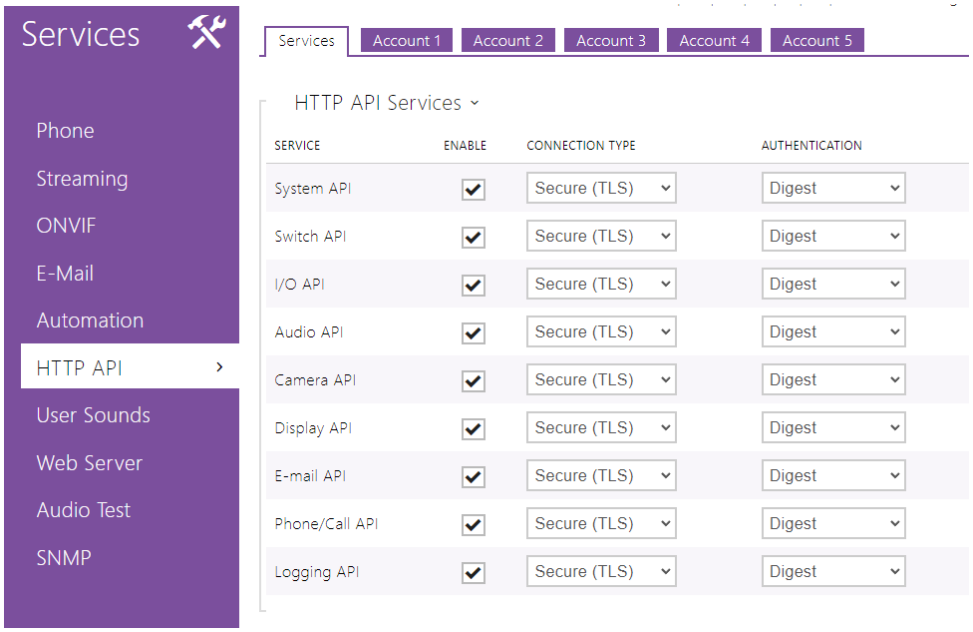
Auto Preview: **Enabled**

HTTP API Activation

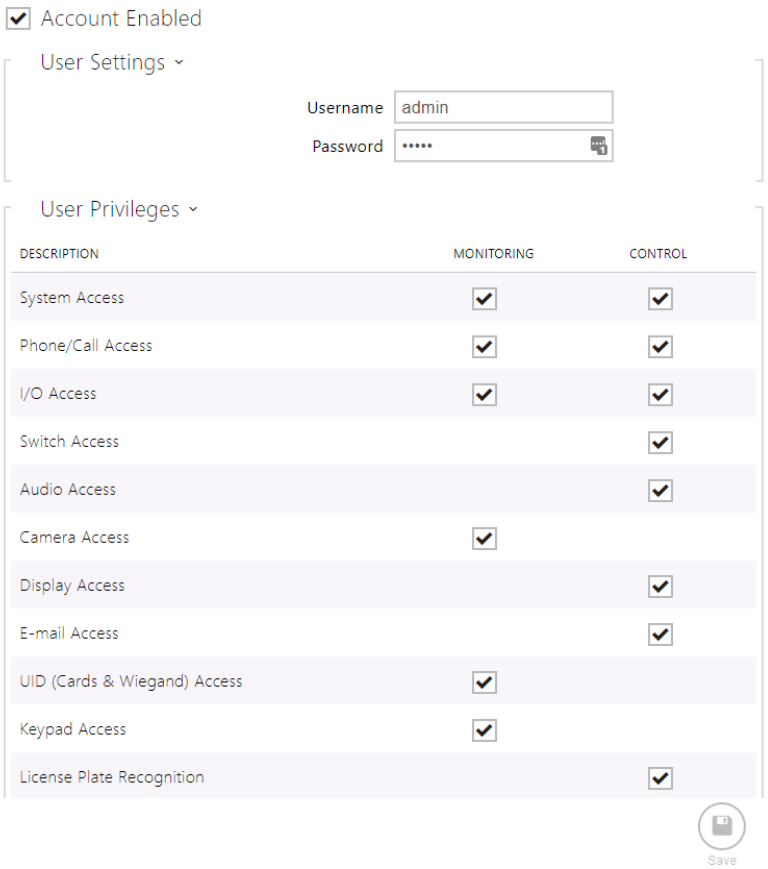
Configuration is required on the 2N IP Intercom devices to allow the connection from OnGuard.

The procedure to set up the 2N devices is as follows:

- Under Services à HTTP API make sure all APIs are enabled and set to Digest Authentication. Connection type can be Secure (https) or Unsecure (http), the corresponding configuration must be set on the Communication Configuration parameters later.



- Under one of the Account tabs, enable Account 1 that will be used to connect from OnGuard. Use the following **User Privileges** settings:



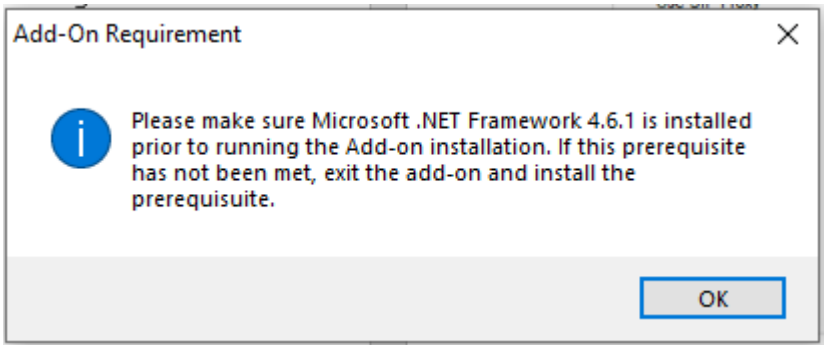
Accessory Add-On Installation

Copy the installers from the 7.6, 8.0, 8.1, 8.2 Accessory Add-On for the 2N TELEKOMUNIKACE package to the OnGuard system to be installed.

NOTE: Use the **setup.exe** to install the add on. **Updatedatabase.exe** is used only in the case of enterprise master where the table alone is to be updated for replication.

To install the add-on:

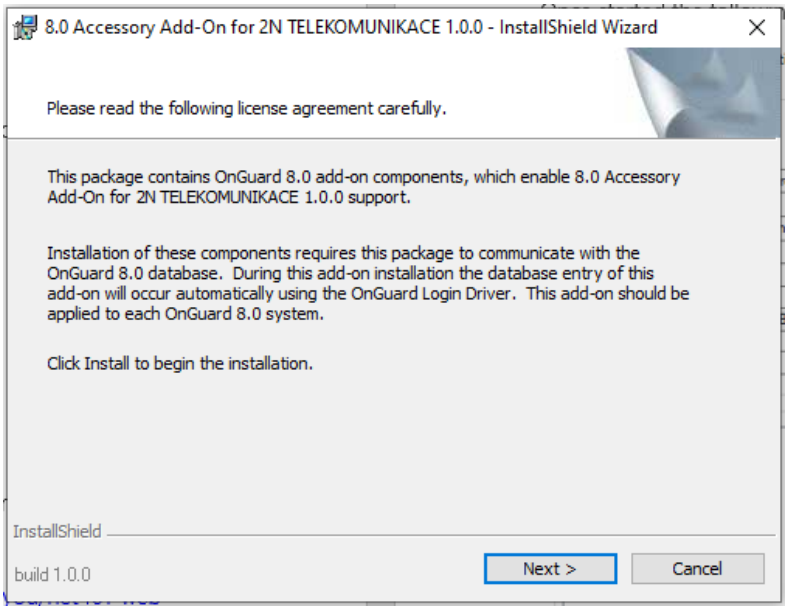
- Double-click on the setup.exe add-on installation file. The following warning notice appears:



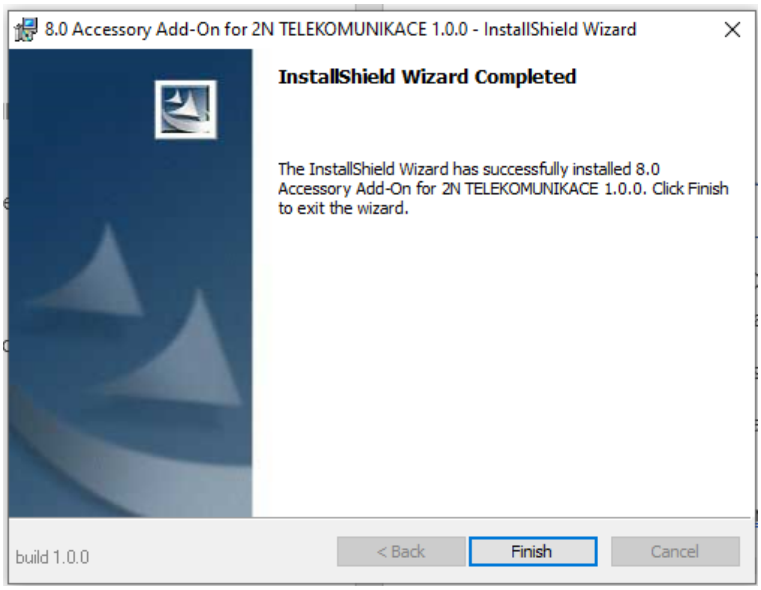
- Ensure .NET framework 4.6.1 is installed on your system. If not, you can find the installer on the Microsoft website at:

  https://dotnet.microsoft.com/download/dotnet-framework/thank-you/net461-web-installer

- Read the license agreement and click on **Next** to confirm



- The installation process will begin. When complete, click on **Finish** to exit.



OnGuard Configuration

2N Intercoms Configuration Application

The 2N integration for OnGuard includes a standalone configuration application to allow some global options to be set and to configure the communication settings per intercom device.

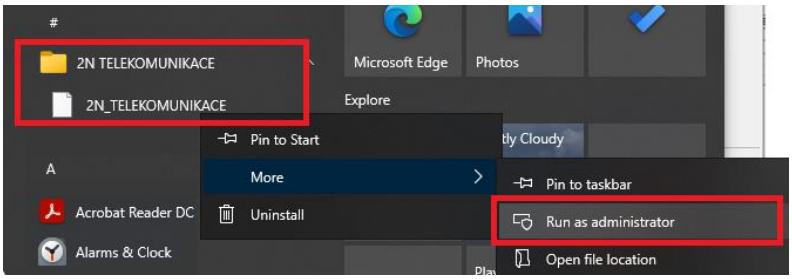
NOTE: this configuration should be performed before adding intercom devices in OnGuard.

The configuration application is located on the Communication Server where the 2N Translator is installed in the following path:

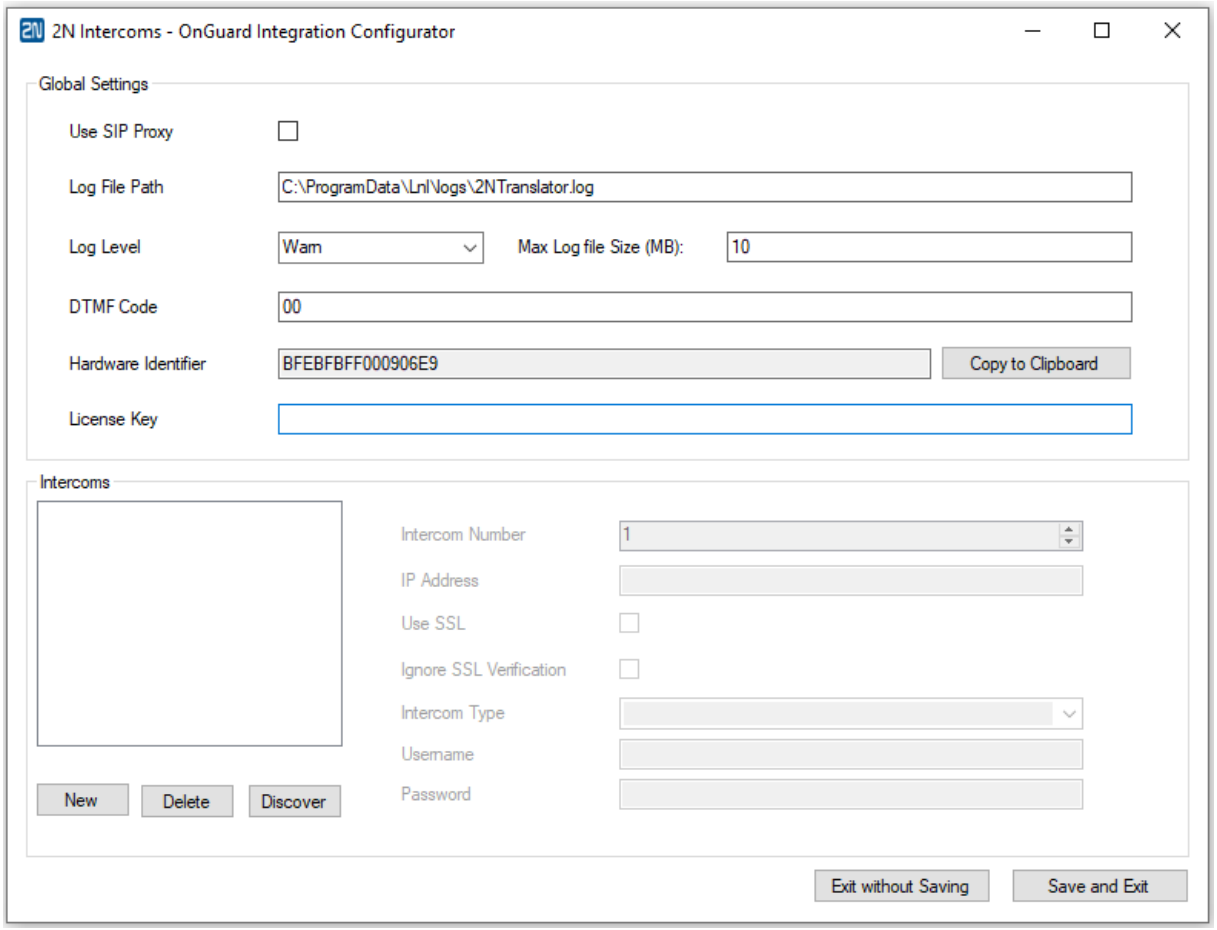
C:\Program Files (x86)\OnGuard\2NConfig\2NIntercomTranslatorConfig.exe

A shortcut will have been created by the add-on installation and can be found under **2N TELEKOMUNIKACE**:

NOTE: The application will need to be run as **Administrator**:



Once started the following window will appear:



Global Settings

The following Global Settings are available:

Setting	Description
Use SIP Proxy	If the 2N system has been configured with an SIP Proxy / exchange enable this option. With this enabled, calls are made using the Intercom Phone Numbers (ID). If disabled, the calls are made using the SIP Intercom IP Address. Default is unchecked.
Log File Path	Location where the translator logging will be saved.
Log Level	Level to log to file. Default is **Warn**.
Max Log file size (MB)	Maximum log file size to output. The log file will overwrite when limit is reached.

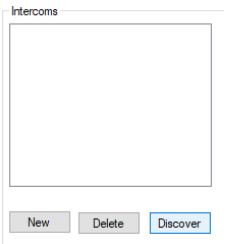
DTMF Code	Code to be used to generate specific open-door events in OnGuard. When a DTMF with this code is sent from a Master Station to an Intercom, the **"Door opening requested by MS"** event is raised rather than the Generic **"DtmfEntered:.."** event. This can be used specifically to open OnGuard doors via Global Input/Output Linkage. This Code must match with "Switch Code" in 2N intercom configuration and "Unlock PIN" in 2N Master Station configuration.
Hardware Identifier	This string should be sent to your 2N distributor when requesting a License key for this integration to run. The license name is 2N® Plugin for OnGuard
License Key	Enter the license key file that will be generated by 2N on request

Adding Intercom Devices

The Intercoms section is used to define all intercoms that will be added to OnGuard and the communication parameters for each intercom.

To auto discover supported intercom devices:

- Click on **Discover**

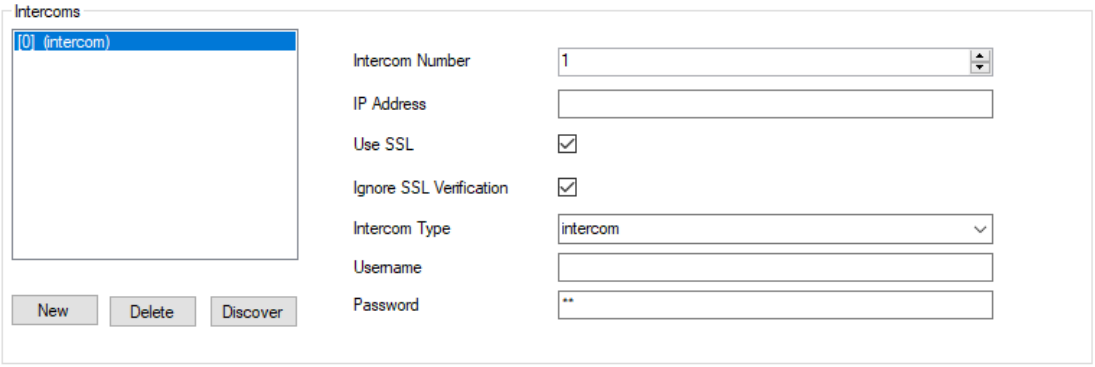


- The Intercom list will populate with any intercoms that support 2N network auto-discovery.

NOTE: Only the IP address is discovered. Follow the next section to edit each intercom settings to add other communication parameters, e.g., username/password. Devices that don't support the auto-discover feature will need to be added manually.

To add an intercom:

- Click on **New** and select the new intercom row in the list on the left to edit the settings:



- While selected enter the following settings:

Field	Description
Intercom Number	Enter the intercom number of the device. This must match the number configured on the 2N device and will be used when adding the device in OnGuard
IP Address	IP address of the 2N IP Intercom
Use SSL	If enabled, connection to 2N REST service will be via https, otherwise http
Ignore SSL Verification	Please enable if self-signed certs are used on the 2N devices.
Intercom Type	Select whether the device being added is a **master** station or substation **intercom**.
Username	Enter the username to connect to the REST API on the device
Password	Enter the password to connect to the REST API on the device.

- To add another device, click **New**, select the new entry and edit field as above.
- Once all devices have been configured, click **Save and Exit**.
- To delete an entry, select the row in the list and click **Delete**.

OnGuard System Administration Configuration

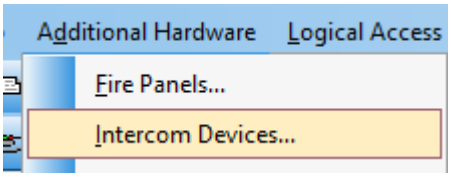
Configuration of 2N devices in OnGuard is done in the System Administration application. During this setup, intercom devices must be added that have already been predefined in the previous section. Master stations can be associated with operator workstations. Global Input/Output linkage can be configured to allow actions to trigger in OnGuard when 2N events are received.

Adding 2N Intercom Device

Intercom stations are added below a parent panel/exchange device in OnGuard. Although the 2N network does not require a central exchange, we need to add this parent device in OnGuard to allow the intercom stations to be added as child devices.

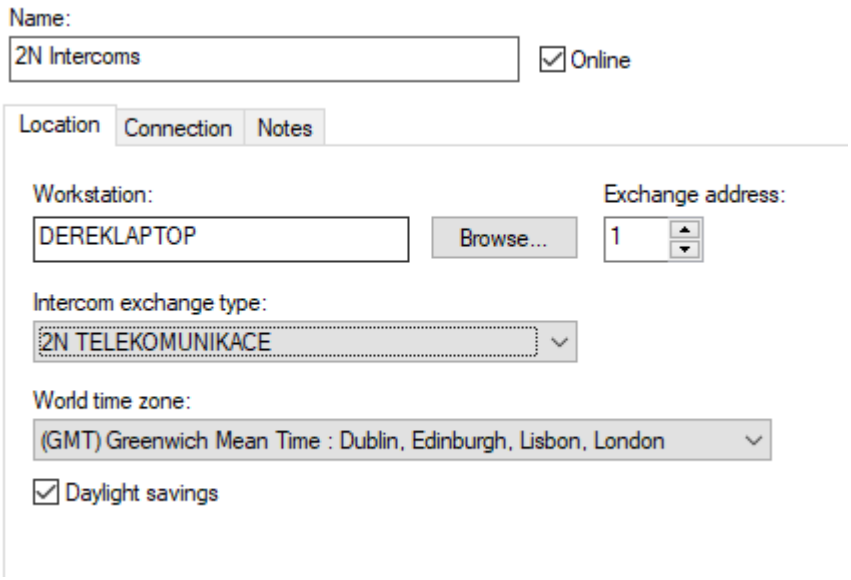
Follow this procedure to add the 2N intercom panel:

1. Open **Intercom Devices...** under **Additional Hardware**:



2. Under the first tab **Intercom Devices** click on **Add**:

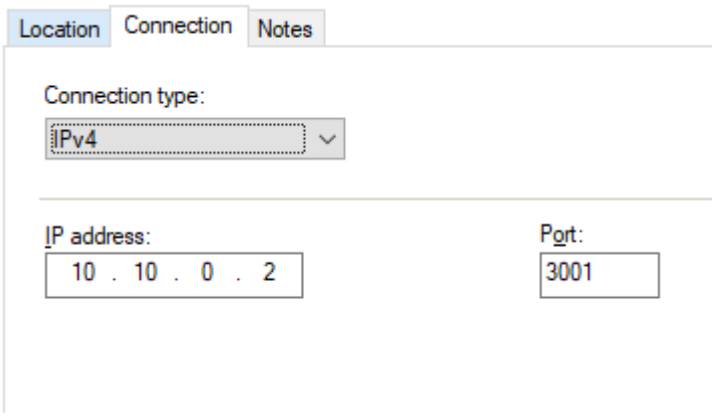
3. Enter the **Name:**



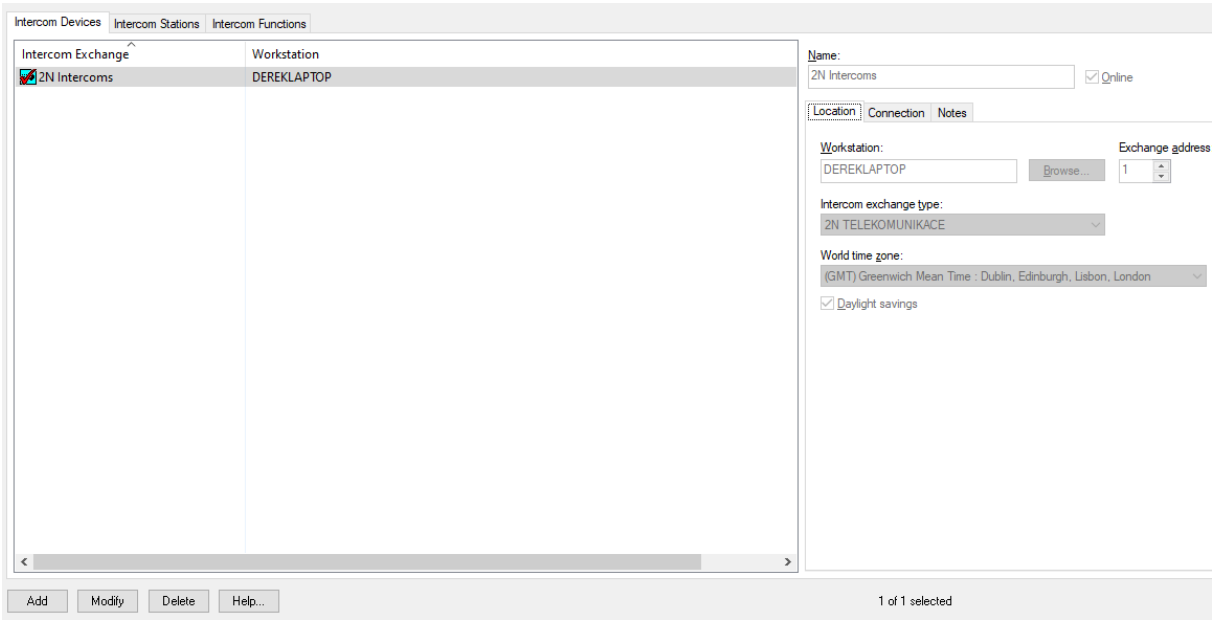
4. Under **Location**:

- Enter/select the workstation where the Communication Service/2N translator will be running.
- Set Exchange address to any unique number.
- In **Intercom exchange type**, select **2N TELEKOMUNIKACE**.

5. Under **Connection**:
   - As there is no physical device at the panel level for 2N these settings, although required in OnGuard, are not used by the 2N translator. Therefore, any value can be used. E.g.:



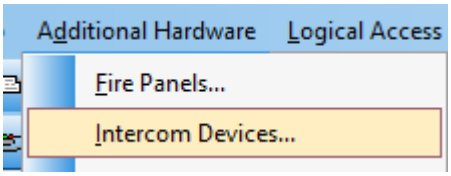
6. Click on OK to save.



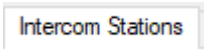
Adding 2N Intercom Stations

Follow this procedure to add Intercom Stations in OnGuard:

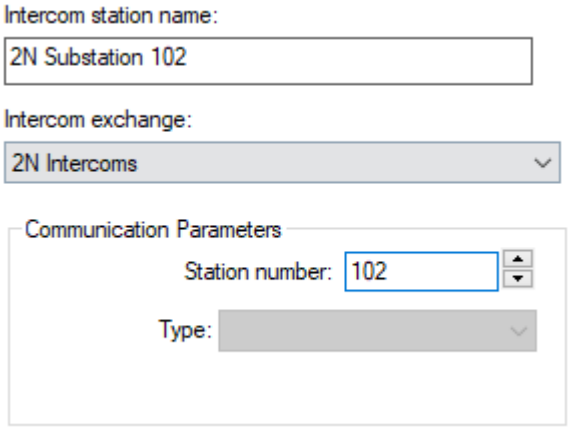
1. Open **Intercom Devices...** under **Additional Hardware**.



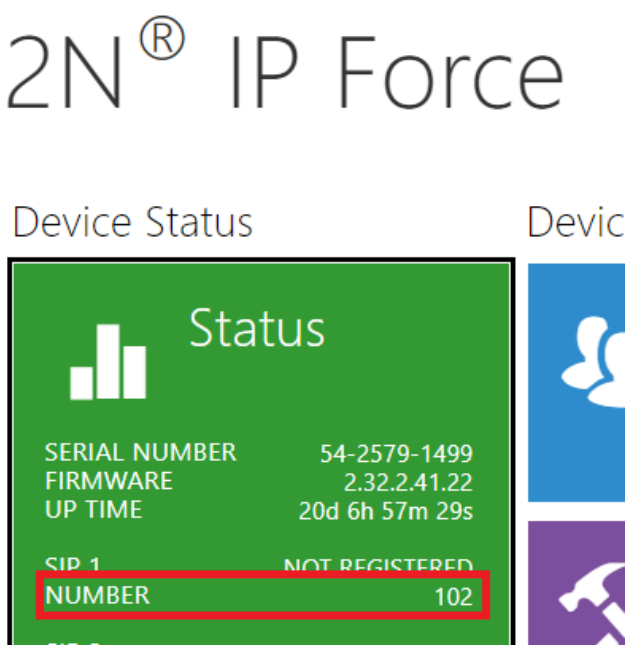
2. Under the first tab **Intercom Stations** click on **Add**:



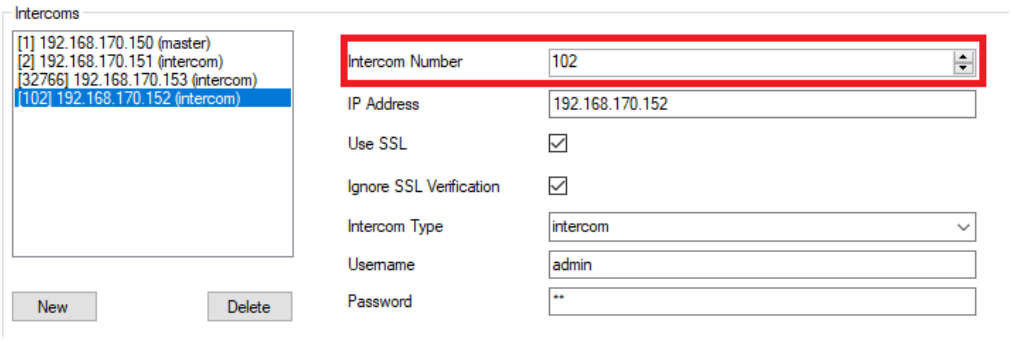
3. Fill in the following fields:
    - Name
    - Select the Intercom device created in the previous section in **Intercom exchange**.
    - Enter the station number in **Communication Parameters**.



NOTE: The Station number represents the number configured on the 2N intercom device. See this example from a 2N® IP Force device, where the station number is 102:

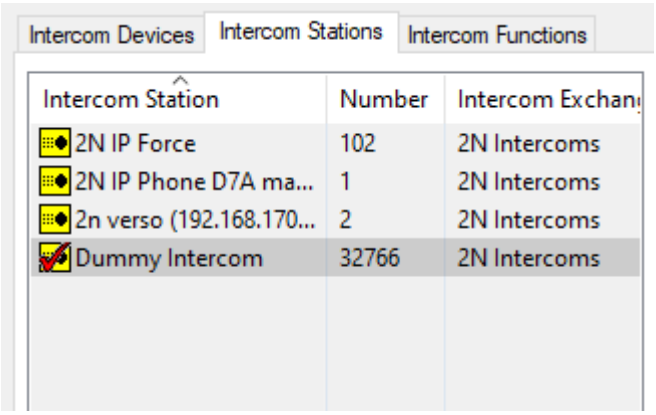


This same intercom number is used to select the entry in the previous *2N Intercoms Configuration Application* chapter that defines the communication parameters to that intercom:



See chapter "2N Intercom basic configuration and prerequisites" describing where this number is configured in 2N Intercoms.

4. Continue to add all intercoms to the Intercom Station list to define all the intercoms on your system



Global Input/Output – Global Linkage

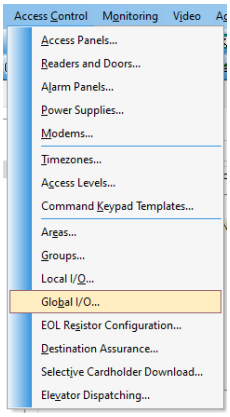
Global linkage allows actions to be triggered from events in OnGuard allowing many use case / configuration options.

Examples:

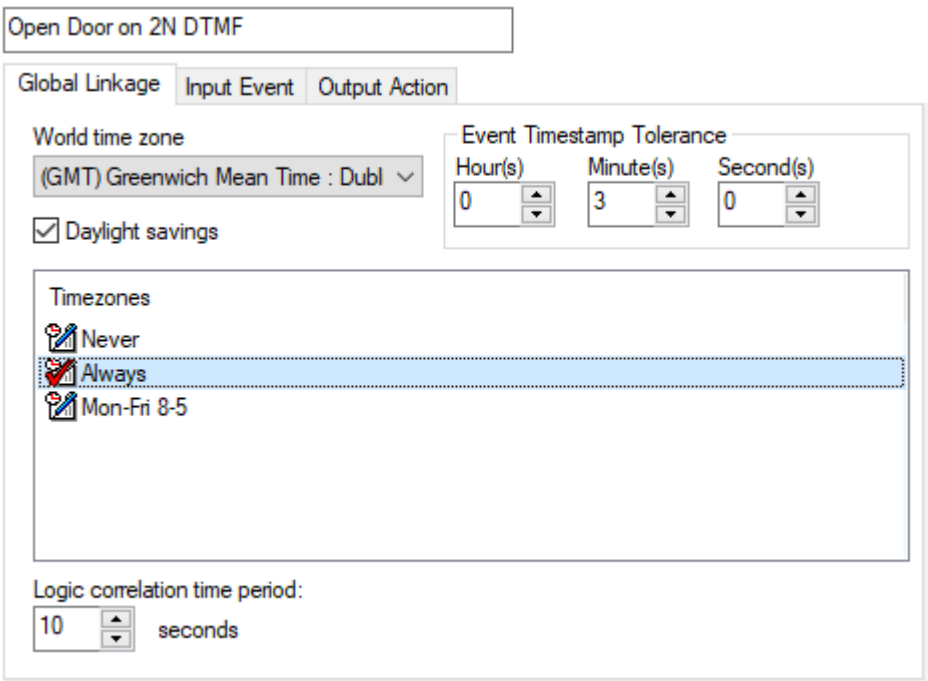
1. From a 2N event trigger OnGuard action - Open an OnGuard door when DTMF code is sent from the master station to an active intercom call.
2. From other OnGuard events, trigger 2N intercom action.

To configure the DTMF code example:

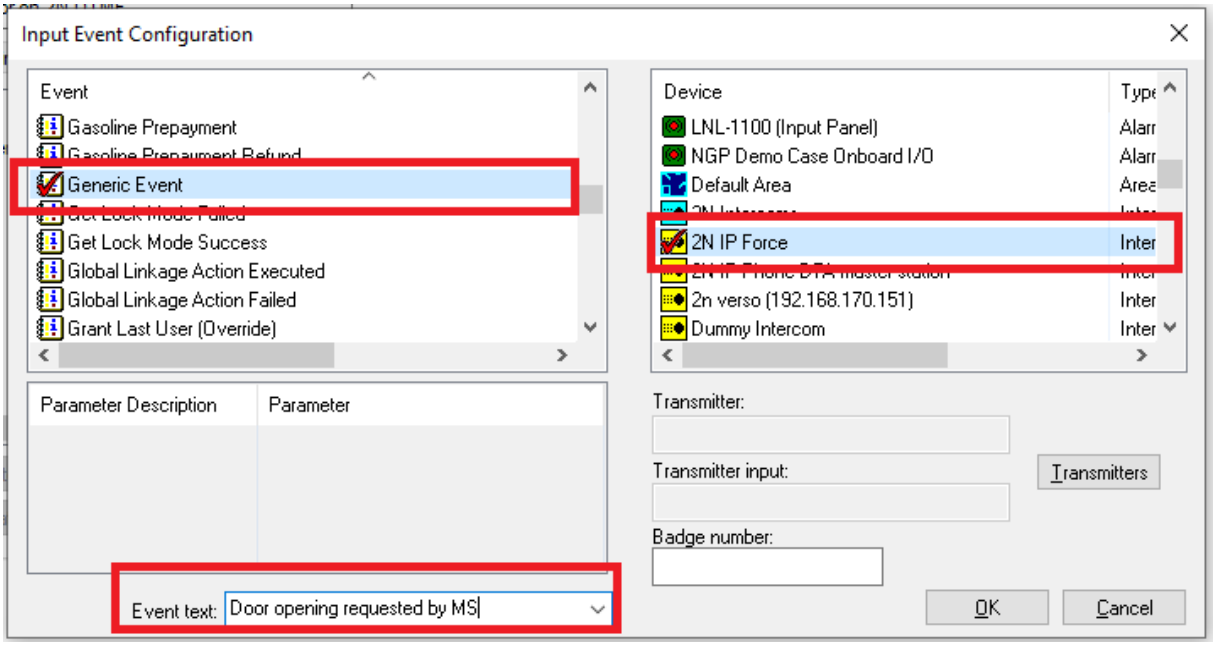
- Open **Global I/O...** under **Access Control**:



- Click on **Add** and under Global Linkage set general options:



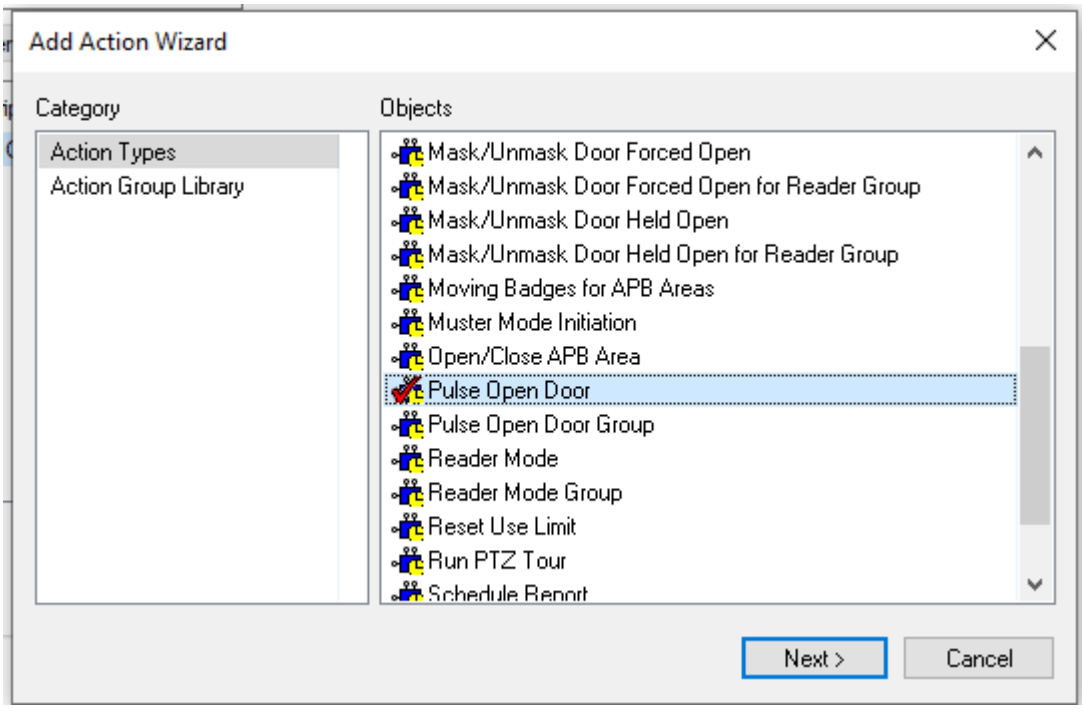
- Under **Input Event** tab click **Add:**



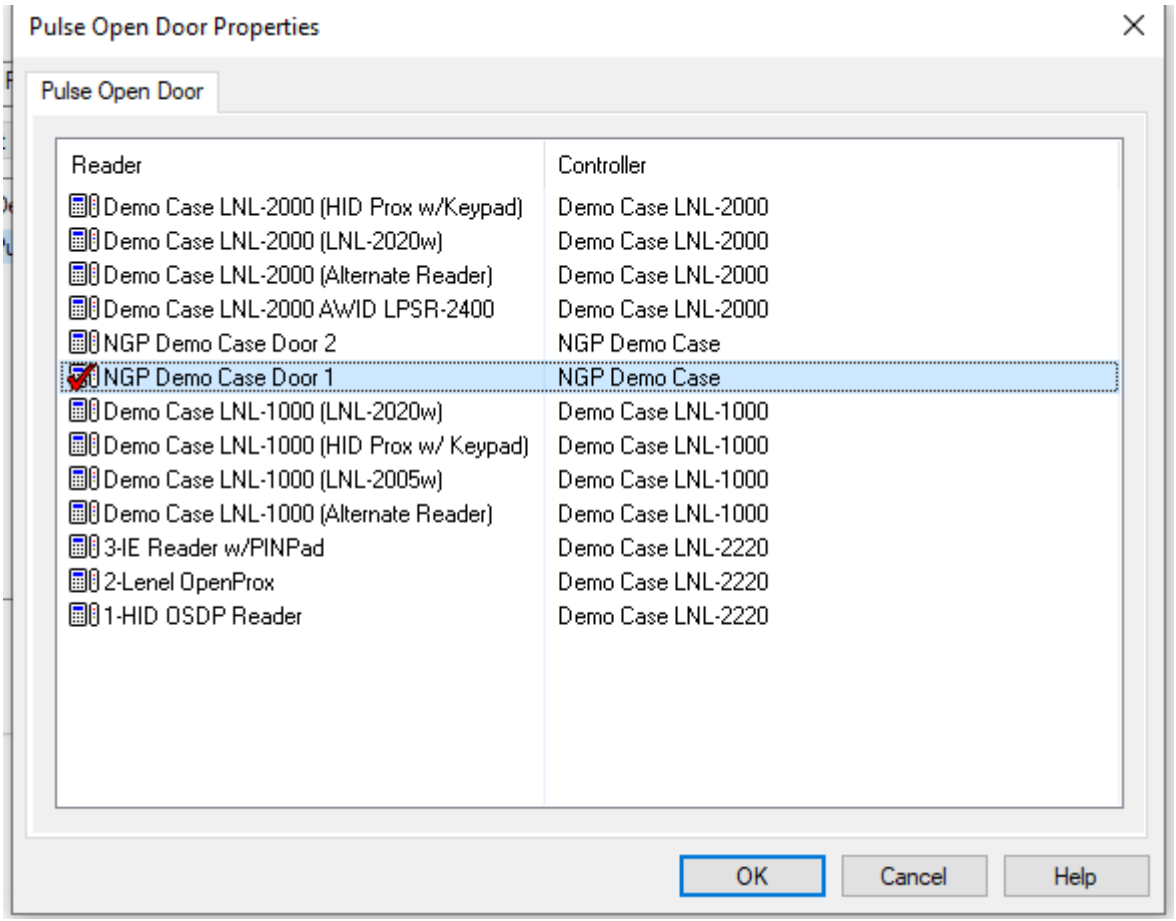
- Select the **Device** on the right that will receive the DTMF event and select **Generic Event** in the **Event** list. In the Event text, enter **Door opening requested by MS**.

NOTE: The input event may be any event supported by the integration. See the **Alarm Monitoring** section that lists all possible events and their text generated by 2N.

- Click on **OK**, go to the **Output Action** tab and click **Add**:

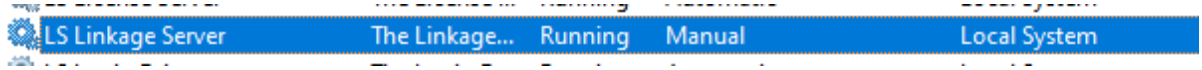


- Select the desired action, e.g., **Pulse Open Door** and click **Next**.



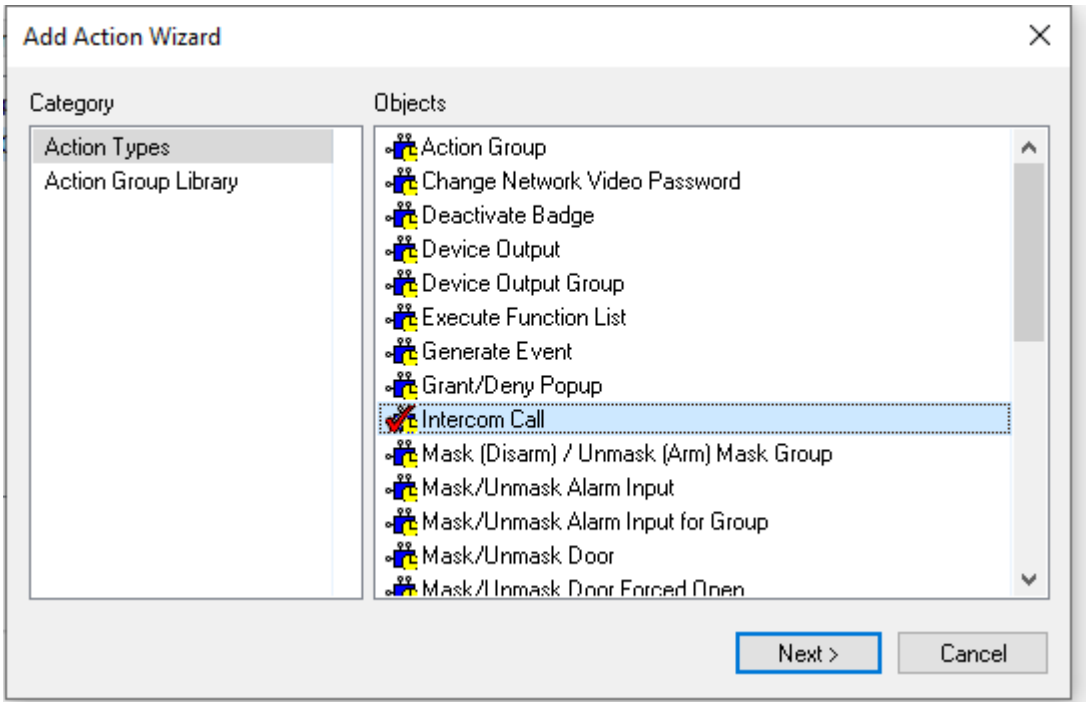
- Select the door to be opened and click **OK**.
- Click **OK** to save the Global Linkage.

NOTE: The global linkages require the **LS Linkage Server** service to be running:

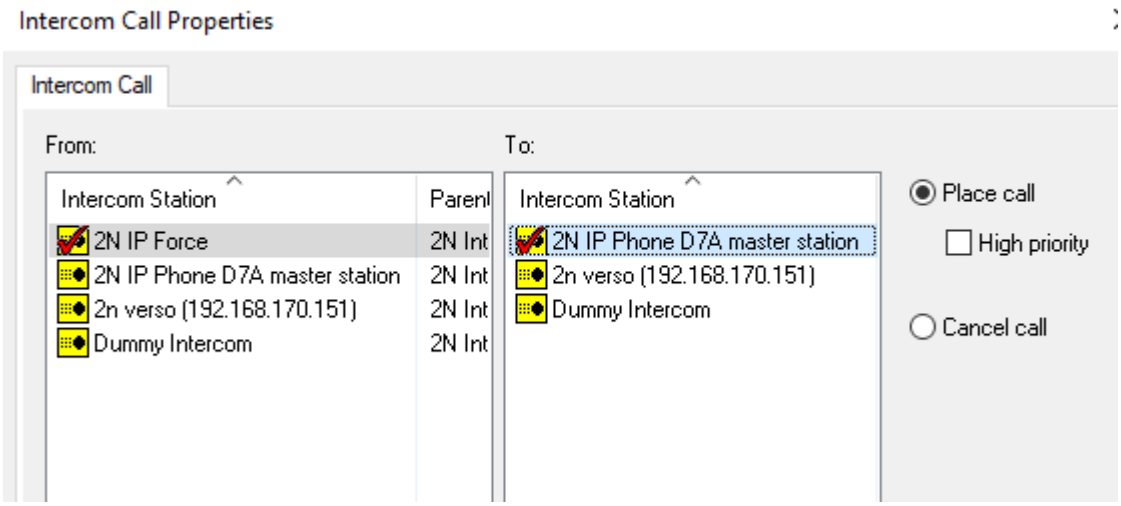


The second example to trigger a 2N call action from any event in OnGuard.

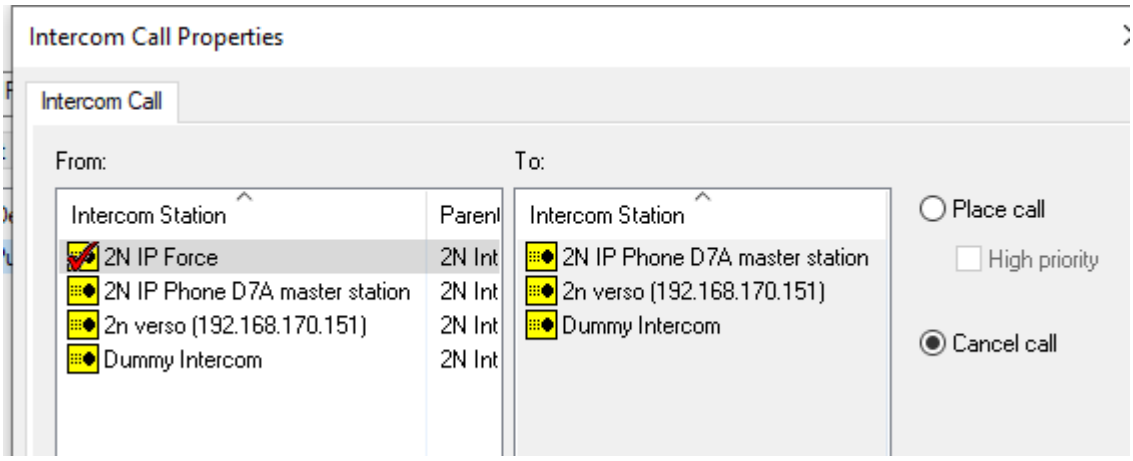
1. When configuring the Output Action, select **Intercom Call**:



2. Then to create action to place a call select the from/to stations with the **Place call** option:



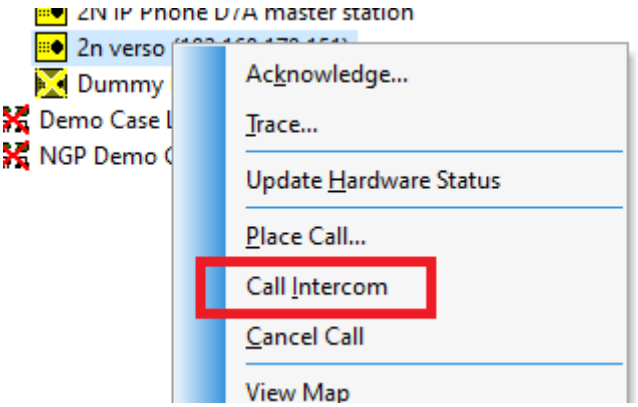
3. Or to create an action to end a call select from station with the **Cancel call** option



Associating a Master Intercom with an Operator Workstation

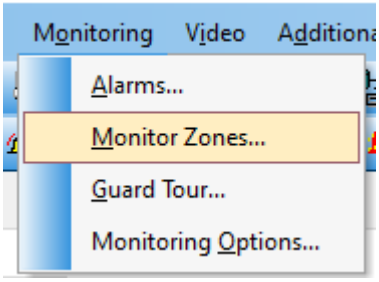
For the **Call Intercom** command to work in the Alarm Monitoring client, the configuration is required to be set from which intercom that call should be. Typically, this would be the master station that is at a particular client workstation.

i.e., Command to call a selected intercom station:

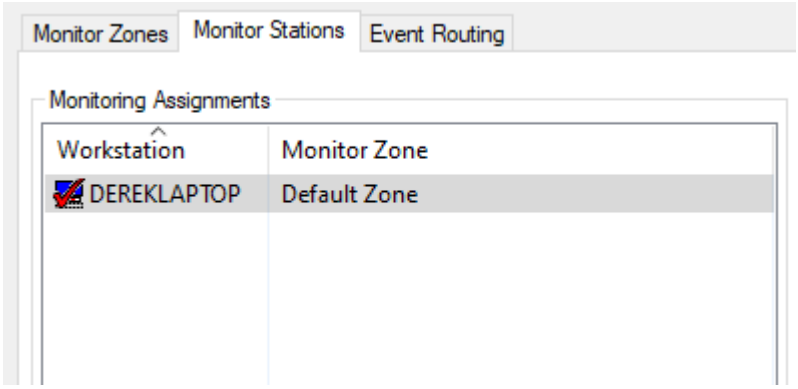


To associate the master station with a workstation:

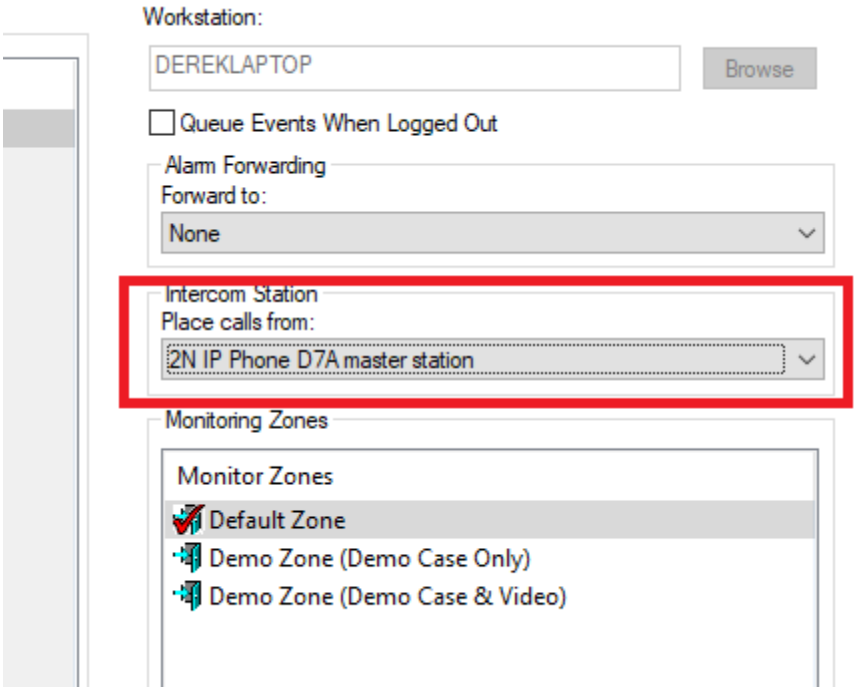
1. Open **Monitor Zones...** under **Monitoring**.



2. Select the **Monitor Stations** tab and select the workstation in **Monitoring Assignments**:



3. Click on Modify and under **Intercom Station à Place calls from**: select the master station to be associated with the workstation:

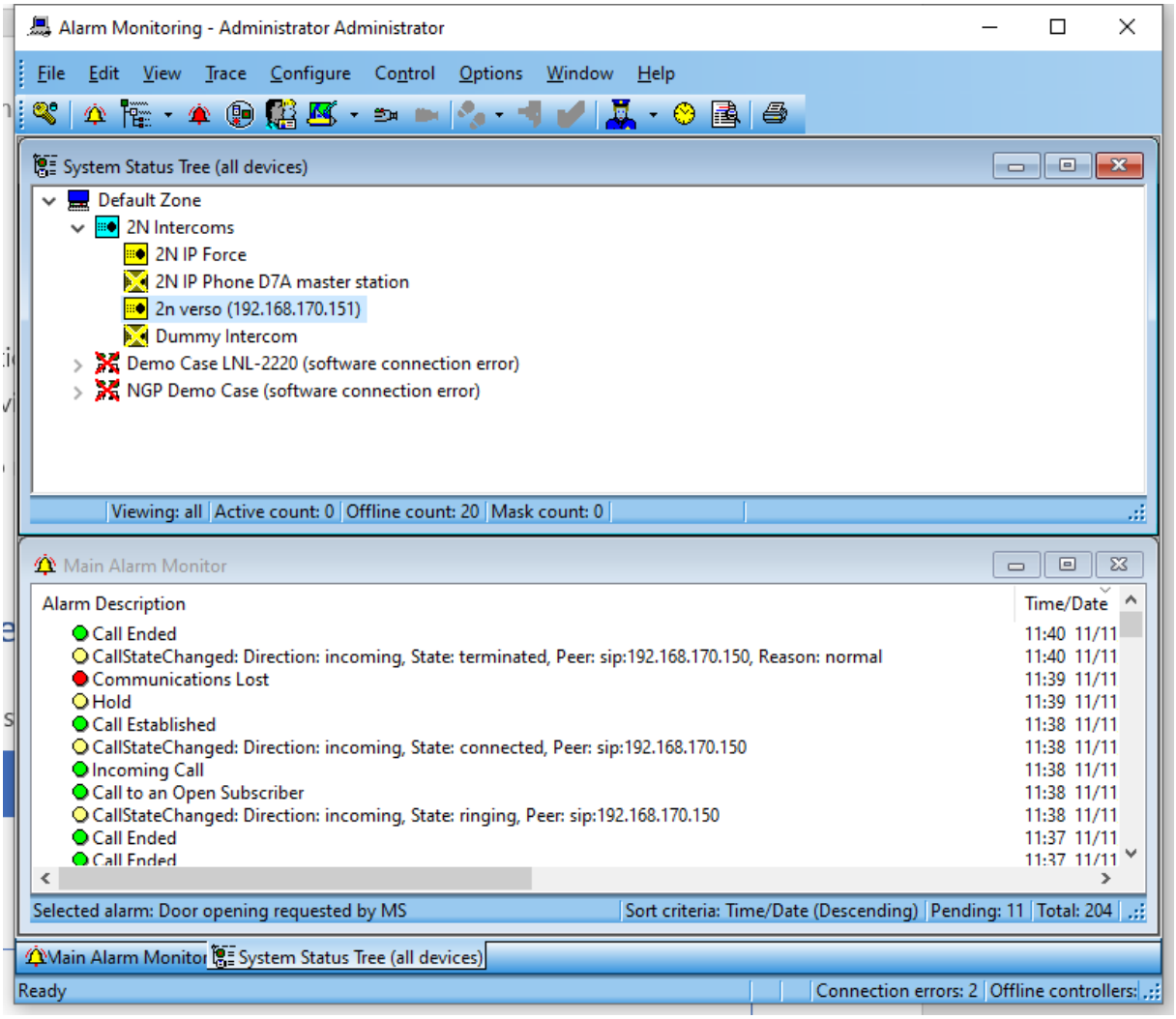


4. Click on **OK** to save.

Alarm Monitoring

The Alarm Monitoring application is where intercom status and events are displayed. Commands can be issued from the status view (call / end call).

The Alarm Monitoring has two main views **Main Alarm Monitor** and **System Status Tree**.



Main Alarm Monitor

The Main Alarm Monitor displays all the intercom events generated by the master and substation intercoms.

The following list of 2N Events are supported in OnGuard:

Events based on call state change (all intercoms):

State Change	OnGuard Event
Call Ended	Intercom Event à Call Ended
Call Initiated/Outgoing Call	Intercom Event à Call to an Open Subscriber
Call Connected/Active	Intercom Event à Call Established
Ringing/Incoming Call	Intercom Event à Incoming Call
On Hold	Intercom Event à Hold (master station only)
Online	System Event à Communications Restored
Offline	System Event à Communications Lost

Events from substations:

2N Event Type	OnGuard Event	Event Text
DeviceState	Generic Event	DeviceState: [State ?]
AudioLoopTest	Generic Event	AudioLoopTest: Result ?
CodeEntered	Generic Event	CodeEntered: Access Point: ?, Direction: ?, Code: ?, Valid: ?, UUID: ?
CardEntered	Generic Event	CardEntered: Access Point: ?, Direction: ?, Reader: ?, Valid: ?, UUID: ?
InputChanged	Generic Event	InputChanged: Port: ?, State: ?
OutputChanged	Generic Event	OutputChanged: Port: ?, State: ?
SwitchStateChanged	Generic Event	SwitchStateChanged: Switch: %d, State: ?
CallStateChanged	Generic Event	CallStateChanged: Direction: ?, State: ?, Peer: ?[,Reason ?]
TamperSwitchActivated	Generic Event	TamperSwitchActivated: [State ?]
LoginBlocked	Generic Event	LoginBlocked: Address: ?

UserAuthenticated	Generic Event	UserAuthenticated: Name: ?
CardHeld	Generic Event	CardHeld: Access Point: ?, Direction: ?, Reader: ?, Valid: ?, UUID: ?
SilentAlarm	Generic Event	SilentAlarm: Access Point: ?, Name: ?
FingerEntered	Generic Event	FingerEntered: Access Point: ?, Direction: ?, Valid: ?, UUID: ?
MobKeyEntered	Generic Event	MobKeyEntered: Access Point: ?, Direction: ?, Valid: ?, UUID: ?
UserRejected	Generic Event	UserRejected: Access Point: ?, Name: ?, Reason: ?
DtmfEntered	Generic Event	If the code matches the configured DTMF Code: Door opening requested by MS Otherwise: DtmfEntered: Code: ?, Type: ?, Valid: ?
ApLockStateChanged	Generic Event	ApLockStateChanged: Access Point: ?, State: ?
RexActivated	Generic Event	RexActivated: Access Point: ?
LiftStatusChanged	Generic Event	LiftStatusChanged: Module: %d, Ready: ?
SwitchesBlocked	Generic Event	SwitchesBlocked: [State ?]
DoorStateChanged	Generic Event	DoorStateChanged: [State ?]
DoorOpenTooLong	Generic Event	DoorOpenTooLong: [State ?]
UnauthorizedDoorOpen	Generic Event	UnauthorizedDoorOpen: [State ?]
LicensePlateRecognized	Generic Event	LicensePlateRecognized: [State ?]
LiftFloorsEnabled	Generic Event	LiftFloorsEnabled: [State ?]
RegistrationStateChanged	Generic Event	RegistrationStateChanged: [State ?]
HardwareChanged	Generic Event	HardwareChanged: [State ?]
MotionDetected	Generic Event	MotionDetected: [State ?]

NoiseDetected	Generic Event	NoiseDetected: [State ?]
AudioLoopTest	Generic Event	AudioLoopTest: [State ?]

System Status Tree

The system status tree shows the current state of the intercom devices and allows commands to be issued to the intercoms.

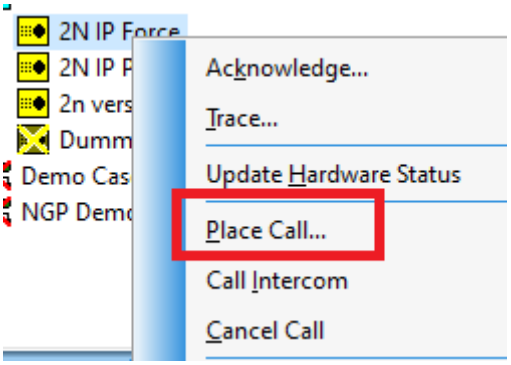
The following states are supported in the Alarm Monitoring client:

Device	States	Description
Intercom Device	 Online	Driver running/normal
	 Offline	Device will show offline if disabled, Communication Service is not running or the License Key missing or incorrect.
Intercom Station		Normal/connected
	 Not running	Driver not running/disabled.
		No connection to intercom station
	(status: queued)	Ringing/Calling
	(status: call connected)	Active call

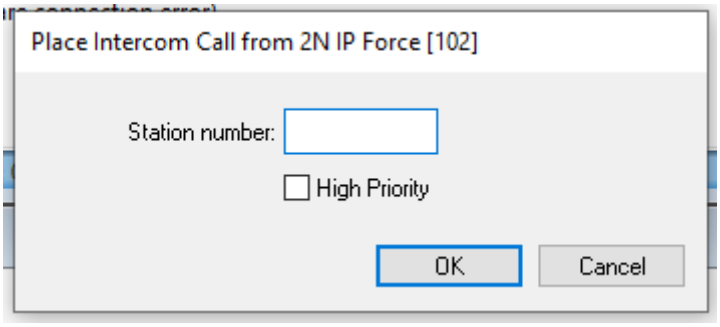
The following commands are supported:

Place call

This command allows an operator to place a call from the selected device:



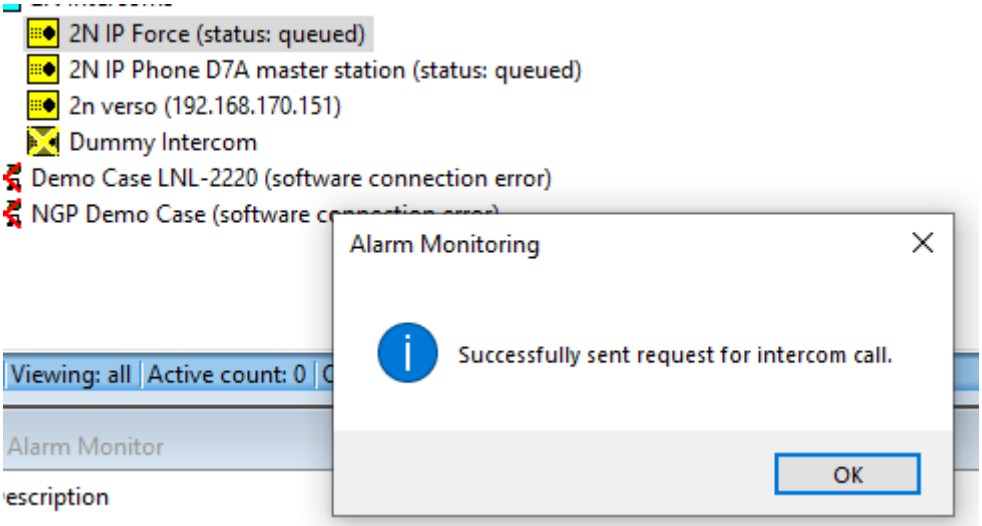
The following windows appears:



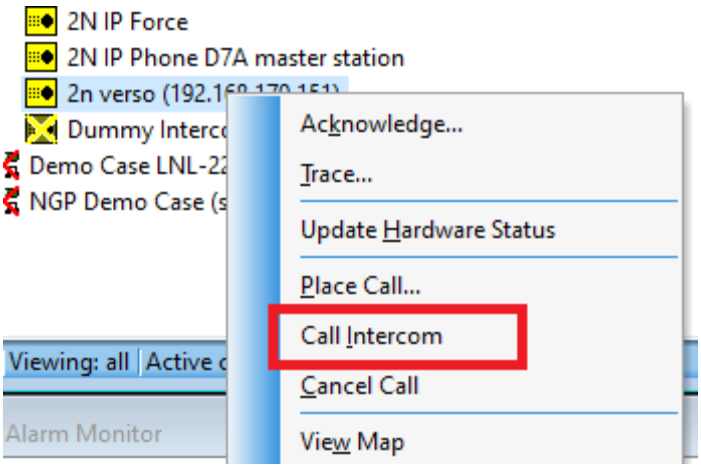
Enter the station number to be called and click OK.

NOTE: High Priority option is not supported for 2N.

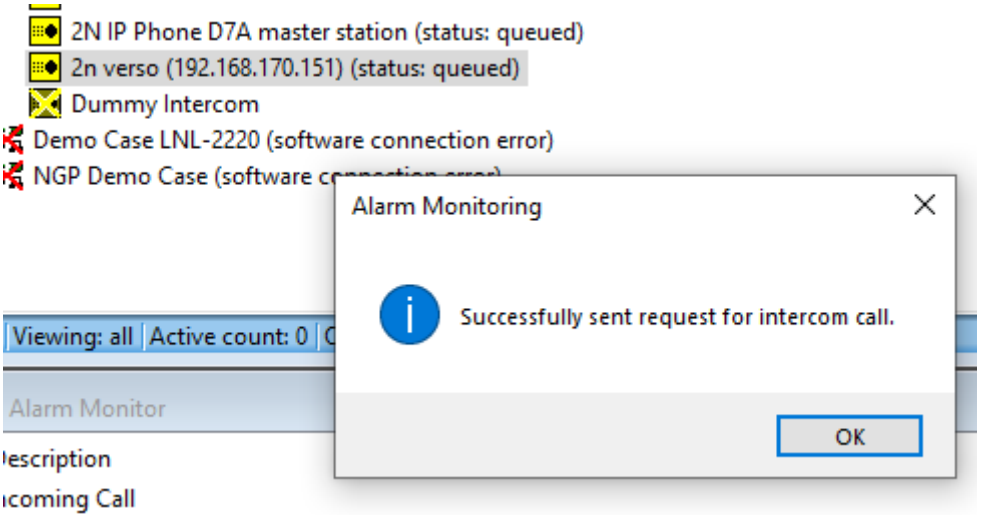
A call will be made from the selected intercom to the station number entered.



Call Intercom

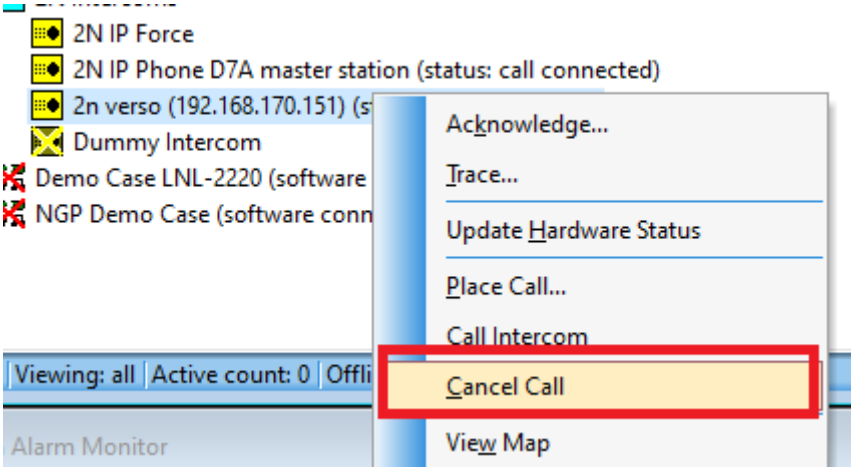


This command calls the selected intercom from the master station associated with the operator's workstation (see Configuration section for configuration steps).



The call is initiated from the workstation associated intercom to the selected intercom.

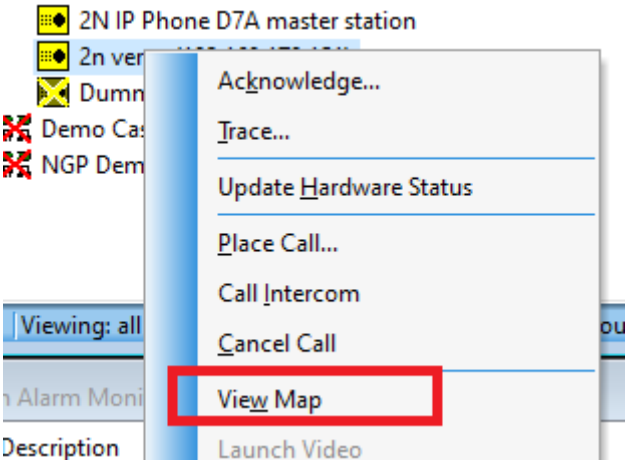
End Call



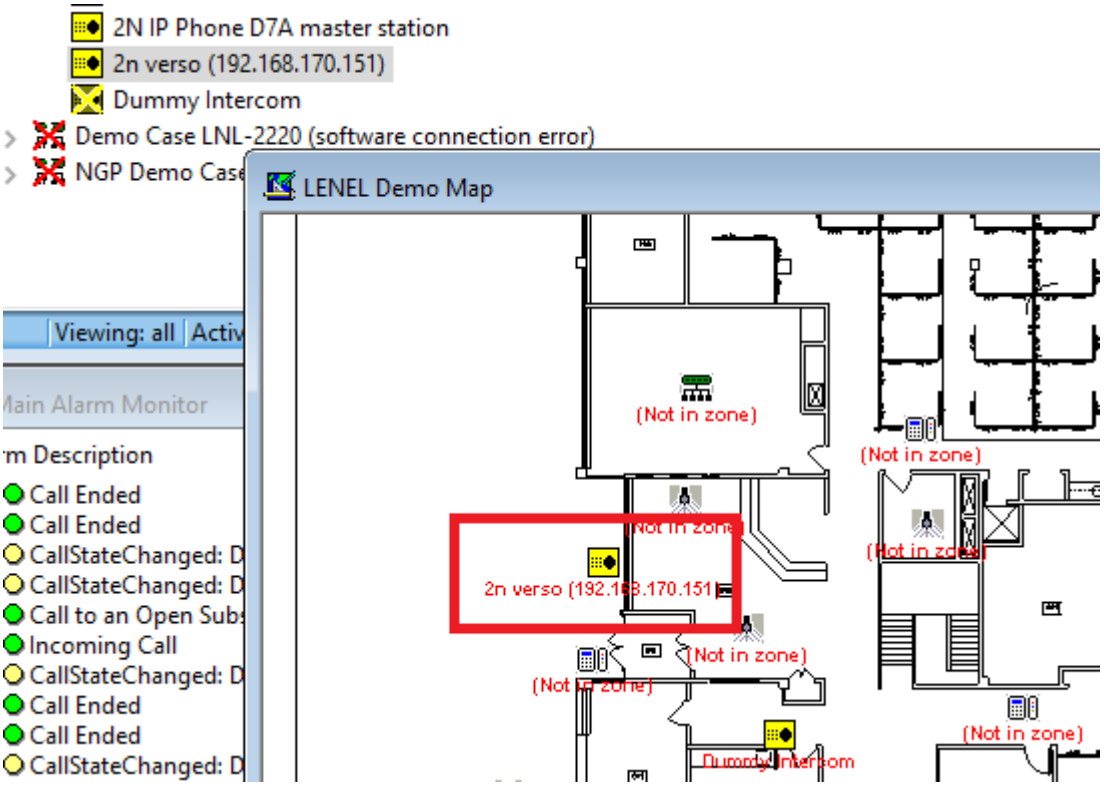
This command will end the call on the selected intercom.

NOTE: Update Hardware Status command on the devices is not supported/required as the devices are being continually polled and any connection status change will be immediately shown in the Alarm Monitoring application.

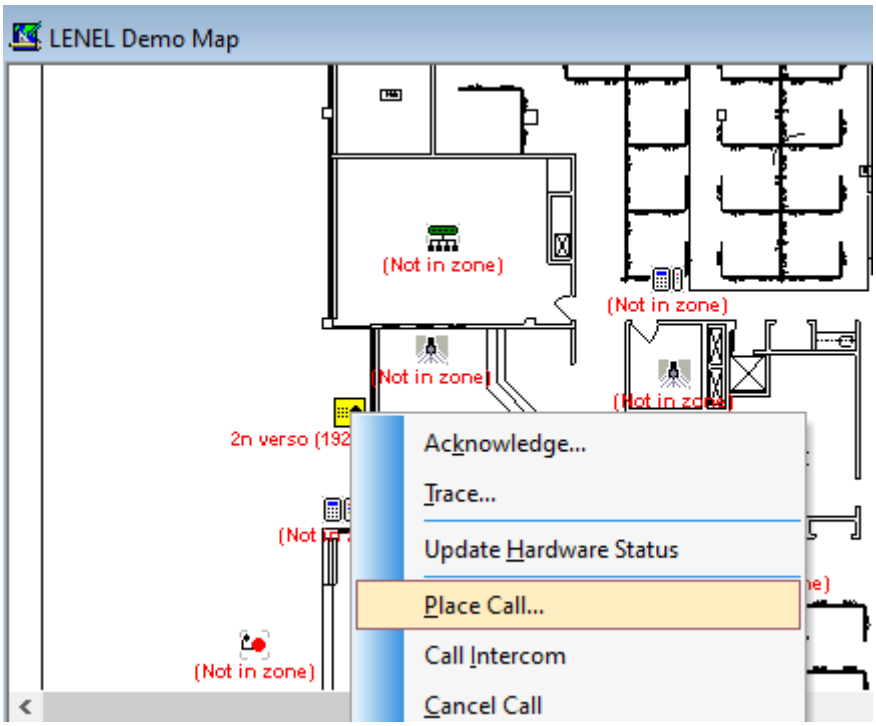
View Map



If the devices have been added to a map clicking on View Map will open the map.



NOTE: the device on the maps supports the same right-click menu for commands, e.g., Place Call... to an intercom station:



Status of the intercoms are also reflected on the map:

Known Issues / Limitations

- Holding calls for master stations from the OnGuard UI is not supported.
- It is not possible to configure custom icons for intercom objects in OnGuard.
- The Intercom Device/Exchange (Panel) for 2N is a virtual device and does not represent actual hardware as the 2N network is peer to peer. Therefore, there are no supported states for the Intercom Device. Only offline will be shown if the license key has not been configured or is incorrect.

Troubleshooting

The 2N translator logs are output the following location by default:

C:\ProgramData\Lnl\logs\2NTranslator.log.

This location and logging level are configurable in the 2N Intercom Configuration application.

Issue	Resolution
2N parent device offline	• Confirm a valid License key has been acquired from 2N Intercoms • Paste the License key into the 2N Intercoms Configuration application and click on Save & Close. • Restart the "LS Communication Server" service (or Disable and Re-enable the Panel to restart the 2N translator)
2N Intercom station offline	• Check the 2N Translator logs for any communication errors. • Confirm there is IP connectivity from the Communication Server to the 2N IP Intercoms. • Check the connection parameters are correct: IP Address / SSL / username / password. • Confirm prerequisites on 2N intercom stations have been carried out.

Visit 2N FAQ section for dealing with troubleshooting issues: FAQ

To create a ticket with 2N Technical Support team, please use this form. 2N Technical Support is also available during business hours through live chat with on call technicians directly on the company website at 2n.com