



## INTEGRITI 2N INTERCOM PLUGIN



**INNER RANGE recommends that all Inner Range systems  
be installed & maintained by FACTORY CERTIFIED  
TECHNICIANS.**

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# *Integrati 2N Intercom Integration*

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## Intercom Capabilities

### Core Intercom Capabilities

Feature	Feature Description	Ver	Y/ N
<i>Receive Events/Alarms from the Intercom System</i>	Log events/alarms occurring on the Intercom system to Integriti's Review.	20	✓
<i>Trigger Integriti Actions on Intercom Events/Alarms</i>	Trigger actions to automatically occur in Integriti whenever specific events/alarms are received from the Intercom system.	20	✓
<i>Generate Alerts from Intercom Events/Alarms</i>	Automatically generate and restore Alerts tied to a specific Intercom in Integriti whenever specific events/alarms are received from the Intercom system.	20	✓
<i>Automatically Show Footage from Associated Cameras</i>	Associated CCTV Footage can be directly viewed from Intercoms, or Intercom events/alarms (with an associated Intercom) where the Intercom has an associated Camera.	20	✓
<i>Display Connection Status to Intercom System</i>	Display whether or not Integriti is currently connected to the Intercom system.	20	✓
<i>Show Intercom Status – Online/Offline/Alarm/Call State</i>	The current online, offline, alarm and call status of configured Intercoms will be visible directly through Integriti.	20	✓
<i>Log Calls Occuring in the Intercom System</i>	Calls occurring in the Intercom system will be logged to Integriti's Review.	20	✓
<i>Categorised Review Records</i>	Review generated by the integration will have a different category for different event types, allowing for easy filtering of specific CCTV events	20	✓
<i>Trigger Inputs on Intercom Event</i>	Inputs in Integriti can be automatically triggered and restored when specified types of events are received from the CCTV system.	20	✓
<i>Trigger Actions in the Intercom System</i>	Trigger actions or commands in the Intercom system directly from Integriti.	20	✓

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<i>Unlock Associated Door</i>	Unlock associated Integriti Door/s directly from an associated Intercom Point	20	✓
<i>Associate Intercoms With Entities</i>	Intercoms loaded from the CCTV system can be associated with Integriti Entities to allow direct control of one from the other.	20	✓
<i>Create Child Devices From Intercom Configuration</i>	Child Intercom Points will be created based on the Intercom configuration on Refreshing Child Devices.	20	✓
<i>View and Control Intercoms on Schematics</i>	Intercoms can be added to Schematics Maps in Integriti and directly viewed and controlled directly from the Schematic. Each intercom's state is immediately visible on the Schematic where available.	20	✓
<i>Sync Time (via NTP)</i>	Sync the time of the Intercom system and Integriti to match via an NTP.	20	✓
<i>Automatically Control Integriti Entities on Intercom Events</i>	Automatically control Integriti Entities on Intercom Events. For example automatically unlocking an associated Door on a Door Unlock event being received from an Intercom	20	✓

### Advanced Intercom Capabilities

Feature	Feature Description	Ver	Y/N
<i>Automatically Load Intercom Configuration</i>	Refreshing Child Devices will automatically populate all cameras configured in the Intercom System into Integrity when run. If not supported, intercom configuration will need to be manually entered into Integrity.	20	x
<i>Create Intercom Calls</i>	Create calls between Intercoms in the Intercom system either manually or automatically (from an event) using Integrity.	20	✓
<i>Terminate Intercom Calls</i>	Terminate pending or active calls in the Intercom system either manually or automatically (from an event) using Integrity.	20	✓
<i>Answer Intercom Calls</i>	Answer pending calls in the Intercom system either manually or automatically (from an event) using Integrity.	20	✓
<i>Forward Intercom Calls</i>	Forward active calls in the Intercom system from one Intercom to another either manually or automatically (from an event) using Integrity.	20	x
<i>Place Intercom Calls On Hold</i>	Place active calls in the Intercom system on hold either manually or automatically (from an event) using Integrity.	20	x
<i>Specify Call Urgency When Creating Calls</i>	When creating calls between Intercoms in the Intercom system, the urgency of the call can be specified from Integrity.	20	x
<i>Make/Terminate PA Calls</i>	Create Announcements in the Intercom System to specified Intercoms from Integrity.	20	x
<i>Adjust Intercom Call Volume</i>	Change the call and/or audio volume of Intercoms from Integrity.	20	x
<i>Restart Intercoms Remotely</i>	Restart Intercoms either manually or automatically (from an event) using Integrity.	20	✓
<i>Activate Intercom Relay</i>	Control the On/Off state of a Relay on an Intercom.	20	✓
<i>Control Intercom Audio Streaming Functionality</i>	Start streaming music or audio on selected Intercoms in the Intercom System in Integrity.	20	x

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<i>Initiate Covert Monitoring of Intercoms</i>	Initiate covert monitoring of a specified Intercom in the Intercom system from Integriti. Intercoms can be monitored either via a specified Intercom or directly through the intercom's video viewer (Where supported).	20	✓
<i>Simulate Button Press on Intercom</i>	Simulate the behaviour of pressing a button on a specified Intercom in the Intercom system from Integriti.	20	✗
<i>Soft Button Push To Talk</i>	Simulate a Push-To-Talk button on a selected integration from Integriti - Either as a command or through the call queue interface.	20	✗
<i>Stream Live Footage From Intercom</i>	Stream live video footage directly from an Intercom into Integriti's video viewer.	20	✓
<i>Select Custom Aspect Ratio</i>	Select a Custom Aspect Ratio for video footage streamed from an Intercom.	20	✓
<i>Digital PTZ</i>	Digitally zoom the Intercom Video stream's image.	20	✓
<i>Stream Audio From Intercom</i>	Receive audio from the microphone on a supported Intercom through an Integriti client workstation	20	✓
<i>Send Audio to Intercom</i>	Send audio from an Integriti client workstation out of the speakers on a supported Intercom.	20	✗
<i>64-Bit Server Support</i>	The integration supports being run on the 64-bit integration server.	20	✓
<i>Intercom Call Queue Support</i>	The current call queue for Intercoms on the Intercom System can be viewed through Integriti's call queue interface.	20	✓

## Integriti 2N Intercom Integration Compatibility

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### Required Integriti Version License

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The Integriti 2N Intercom Integration requires an Integriti Pro/Infiniti v21 license or higher to be present on the product key running the integration.

### Minimum Installed Integriti Version

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The Integriti 2N Intercom Integration is only compatible with an installation of Integriti Pro or Infiniti that is v20.0 or higher.

### Licensing Requirements

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The Intercom Integration license is required to use the 2N Plugin.

### 2N Intercom Licensing

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2N Intercoms come with an independent basic license, however any additional licensed features require a trial license (that may be activated within the intercom configuration) or an independent license package. The 2N Intercom can then be configured through its HTTP API settings to create an account accessible by Integriti.

To use non-video integration features (such as call queue) and for any intercom point to have an 'online' status, at minimum an enhanced integration license must be configured in that intercom's system settings.

Monitoring or viewing video from an intercom will require both the enhanced integration license and an enhanced video license configured on the intercom's settings.

### Tested Against

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The Integriti 2N Intercom plugin was built and tested against the following versions of software:

- 2N IP Force (Hardware version: 555v5, Firmware version: 2.31.0.40.5)
- 2N IP Verso (Hardware version: 570v6, Firmware version: 2.31.0.40.5)
- 2N HTTP API v2.30

## 2N Configuration

Services Account 1 Account 2 Account 3 Account 4 Account 5

HTTP API Services ▾

SERVICE	ENABLED	CONNECTION TYPE	AUTHENTICATION
System API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Basic ▾
Switch API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Basic ▾
I/O API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Basic ▾
Audio API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Basic ▾
Camera API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Basic ▾
Display API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Basic ▾
E-mail API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Basic ▾
Phone/Call API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Basic ▾
Logging API	<input checked="" type="checkbox"/>	Secure (TLS) ▾	Basic ▾

### HTTP API Services

All HTTP API settings can be found within the 'HTTP API' section of the 2N Intercom's service settings.

**Enabling Services** - At an absolute minimum, the System API, Phone/Call API, and Logging API should be enabled for the Intercom System to start up, but it is recommended to enable all services for the full functionality within Integrity.

**Connection Type** - When configuring an Intercom Point in Integrity, make sure the HTTP API services has the same connection type (Secure for HTTPS, Unsecure for HTTP) in Integrity.

**Authentication Type** – As with the connection type, the authentication used should be the same type as you configure in Integrity.

Services Account 1 Account 2 Account 3 Account 4 Account 5

Account Enabled

User Settings ▾

Username

Password

User Privileges ▾

DESCRIPTION	MONITORING	CONTROL
System Access	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Phone/Call Access	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
I/O Access	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
Switch Access		<input checked="" type="checkbox"/>
Audio Access		<input checked="" type="checkbox"/>
Camera Access	<input checked="" type="checkbox"/>	
Display Access		<input checked="" type="checkbox"/>
E-mail Access		<input checked="" type="checkbox"/>
UID (Cards & Wiegand) Access	<input checked="" type="checkbox"/>	
Keypad Access	<input checked="" type="checkbox"/>	

### HTTP API Account Configuration

At least one user account should be enabled, and this account can be used in configuring Intercom Points. If possible, monitoring and control should be enabled similarly to services, otherwise an Intercom Point configured with this account will not have that service's functionality.



## RTSP Stream

RTSP Server Enabled

Streams Settings ▾

Audio Stream Enabled

Video Stream Enabled

Video Codec

Anonymous Access

Stream URL

**RTSP Server Enabled** – Enables/disables the RTSP Server. Integriti accesses the RTSP Server in to show a stream of the intercom’s camera.

**Audio Stream Enabled** – Whether or not the stream can transmit audio. The audio streaming capability depends on the configured intercom’s capabilities. In the case of video being disabled, when pressing ‘Show Video’ the stream will only have audio.

**Video Stream Enabled** – Whether or not the stream can transmit video. When disabled, ‘Show Video’ in Integriti will not successfully show footage.

**Video Codec** – The codec of the video stream. Setting this within the intercom configuration does not prevent Integriti from using any of the other codecs when configured on an intercom system, and this configuration option is mainly for the 2N side.

**Anonymous Access** – When enabled, the RTSP Stream can be accessed by anyone connecting to it without a username or password.

**Stream URL** – A display of what URL can be used to retrieve the RTSP stream manually.

H.264 Video Parameters ▾

Video Resolution

Video Framerate

Video Bitrate

MPEG4 Video Parameters ▾

Video Resolution

Video Framerate

Video Bitrate

MJPEG Video Parameters ▾

Video Resolution

Video Framerate

Video Quality

**Video Resolution/Framerate/Bitrate** – The resolution, frame rate, and bitrate of the video stream when that codec is used to stream.

Authorized IP Addresses ▾

IP Address 1

**Authorized IP Addresses** – A list of IP Addresses (up to four) that are authorised to access the stream. This can be used to restrict which addresses can request and retrieve the RTSP stream. When the list is left blank, any connection can request the stream.

Transmission Quality Settings ▾

QoS DSCP Value

UDP Unicast Enabled

Maximum Video Packet Size

Starting RTP Port

**QoS DSCP Value** – sets the audio/video RTP packet priority in the network. The set value is sent in the TOS (Type of Service) field in the IP packet header.

**UDP Unicast Enabled** – enable audio/video stream sending via the RTP/UDP. If this mode is off, the audio/video stream data are sent via the RTP/RTSP only.

**Maximum Video Packet Size** – set the maximum size of the video packets to be sent via the RTP/UDP.

**Starting RTP Port** – sets the starting local RTP port in the range of the length of 60 ports to be used for audio and video transmissions. The default value is 4800 (i.e. the used range is 4800–4859).

## ONVIF Account Configuration

Under the ONVIF configuration tab, accounts can be configured which can be used when ‘Anonymous Access’ in the RTSP Stream configuration is disabled. In this case, when streaming video from Integriti, the details of one of the enabled accounts must be used to view video.

Note that other options not listed here that are in the ONVIF tab are related to ONVIF Profile S configuration, designed for compatibility with external ONVIF devices.

Accounts ▾

ENABLED	NAME	PASSWORD	ACCESS LEVEL
<input checked="" type="checkbox"/>	<input type="text" value="admin"/>	<input type="password" value="*****"/>	User ▾
<input type="checkbox"/>	<input type="text"/>	<input type="password"/>	User ▾
<input type="checkbox"/>	<input type="text"/>	<input type="password"/>	User ▾
<input type="checkbox"/>	<input type="text"/>	<input type="password"/>	User ▾
<input type="checkbox"/>	<input type="text"/>	<input type="password"/>	User ▾

**Enabled** – Whether or not the account is enabled. To use the configured credentials to view the intercom video, the account must be enabled.

**Name/Password** – The credentials of the account that can be entered in the ONVIF fields in the Integriti intercom point configuration.

**Access Level** – The access level privileges for this user account for ONVIF standards. For Integriti usage, any access level will allow RTSP streams to be viewed.

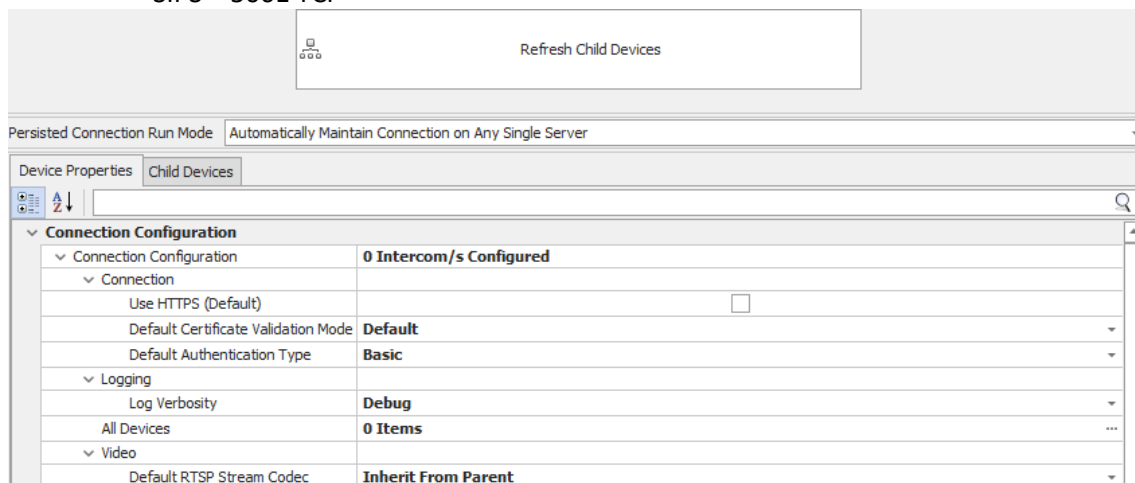
## Integriti Configuration

This section specifies the 2N Intercom Integriti Integration specific configuration details. Please refer to the ‘Integriti Integrations – Intercom’ manual for a detailed description on how fully to configure and use Intercom integrations in Integriti/Infiniti.

### Ports Used

The following ports are used for communication between Integriti and 2N intercom points. These ports should be configured in the Integriti Integration Server and any Integriti Client Machine's firewalls to allow the integration to be used.

- HTTP – 80 TCP
- HTTPS – 443 TCP
- RTSP – 554 UDP
- SIP – 5060, 5062 TCP/UDP
- SIPS – 5061 TCP



### Connection

**Certificate Validation Mode** – The validation used if the intercom’s web certificate is invalid. ‘Accept All’ allows functionality with the intercom even if there are network SSL Policy errors, while ‘Default’ only allows functionality when there are no network SSL Policy errors.

Setting to ‘Specified Thumbprint’ requires the thumbprint of the certificate to match the one specified in this connection’s properties. The mode ‘Inherit from Parent’ in an intercom system always uses validation mode ‘Default’, while in an intercom point it inherits from the system instead.

**Certificate Thumbprint** – If ‘Certificate Validation Mode’ is set to ‘Specified Thumbprint’, if SSL Policy errors are found then it will check if the specified value matches the certificate’s thumbprint before validating. This value can be left blank in an intercom point to inherit from the intercom system, or a value can be entered to override the intercom point’s thumbprint.

### Logging

**Log Verbosity** - Only logs of the specified level or higher will be logged. If Warning is selected, only Warning, Error and Fatal logs will be written to the log.

## All Devices

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**(X) Items** - All the configured intercom points in this system. Editing this opens a window which allows you to add, remove and configure intercom points. Refer to 'Intercom Point Configuration' for further information on how to configure individual intercom points for the 2N intercom system.

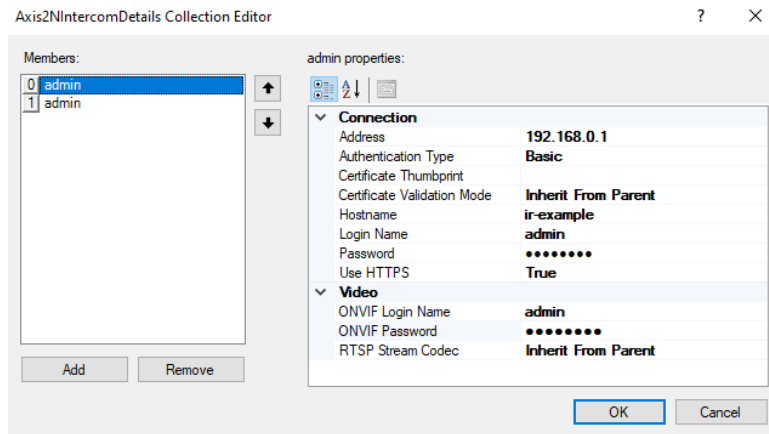
## Video

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**RTSP Stream Codec** – Selects a stream codec to be used when 'Show Video' is selected on a child intercom point unless the intercom point has overridden this by selecting an option for the stream codec other than 'Inherit From Parent'. In the intercom system, selecting 'Inherit From Parent' defaults to the stream codec H264.

## Intercom Point Configuration

Intercom points are configured under the intercom system's connection configuration settings, found in 'All Devices'. Editing this opens the following window which allows you to add, remove and configure intercom points:



### Connection (Intercom Point)

**Address** – The IP Address of the 2N Intercom to connect to.

**Authentication Type** – The authentication type of the requests being made. This value should be the same as configured on the HTTP API settings of the 2N Intercom.

**Certificate Thumbprint** – If blank, uses the certificate thumbprint of the parent intercom system. Otherwise, this value overrides the parent intercom system's certificate thumbprint when validating certificates on 'Specified Thumbprint' mode.

**Certificate Validation Mode** – The certificate validation mode used for this intercom point. Unlike the intercom system configuration, configuring 'Inherit From Parent' will instead use the same validation mode as the intercom system. All other validation options will override the parent intercom system's validation mode for this particular intercom point.

**Login Name** – The username of the 2N Intercom HTTP API Account (found in configuration) used to connect to the Intercom. Any user privileges are found in the Intercom's HTTP API settings.

**Password** – The password of the 2N Intercom HTTP API Account used to connect to the intercom.

**Use HTTPS** – Whether or not HTTPS is used to make requests to the intercom point. This can be found in the Intercom's HTTP API configuration under 'Services' (HTTPS is a 'Secure' connection type, not using HTTPS is 'Unsecure').

**Hostname** – The host name that will automatically call the endpoint ID when a call workstation command is used on the intercom from that device. This value should be a unique host name not found on any other intercom, otherwise any call commands will automatically use the first intercom with the hostname instead of the intended one.

### Video

**ONVIF Login Name** – The username of the ONVIF Account used to access the RTSP Stream displayed when this intercom point's video has been shown. If the intercom is not configured to use a username, this field is ignored.

**ONVIF Password** – The password of the ONVIF Account for stream access.

**RTSP Stream Codec** – The codec used for the video stream. Setting to 'Inherit From Parent' will use whatever codec the parent intercom system uses, otherwise specifying another codec overrides the parent intercom system's configuration.

## Commands

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### Intercom Point Commands

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The following commands can be performed on an Intercom Point:

<b>Call Intercom</b>	<p>Calls another intercom point using a specified destination. If the destination is a hostname, it will call the corresponding intercom associated with an endpoint ID in that intercom system's Workstation to Endpoint map.</p> <p>Otherwise, it will attempt to use the destination as a serial number to call another intercom point that is registered on Integrati.</p>
<b>Call Phone Number/SIP URI</b>	<p>Calls another intercom directly using a phone number or SIP URI. Can call intercoms not present on Integrati.</p>
<b>Answer Call</b>	<p>Answers a call with the specified session ID.</p>
<b>End Call</b>	<p>Ends a call with the specified session ID.</p>
<b>Set Output State</b>	<p>Controls the statuses of device logic outputs at a port, turning them on or off according to the selected state.</p>
<b>Switch Control</b>	<p>Controls the status of a switch, activating, deactivating, or triggering (toggling the state) it.</p>
<b>Restart System</b>	<p>Restarts the 2N Intercom system remotely.</p>
<b>Audio Test</b>	<p>Runs an automatic test of the intercom built-in microphone and speaker.</p>

## Troubleshooting

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**An intercom point does not appear inside the intercom point list**

Make sure that your Integriti intercom system has the intercom point configured in the 'All Devices' section and the intercom system has been refreshed using 'Refresh Device'.

**Black screen when trying to monitor intercom**

The account configured in the intercom point for RTSP streaming should have permissions to stream and that the selected options such as codec are properly configured under 'Streaming' on the 2N Intercom. Otherwise, if stream access without an account configured on the 2N Intercom is desired, 'Anonymous Access' can be selected under the 'Streaming' configuration.

**Audio not playing when monitoring intercom**

The RTSP stream configuration under 'Streaming' on the 2N Intercom should have 'Audio Stream Enabled' checked to allow for audio to play when monitoring the intercom on Integriti.

**Connection/HTTP Requests do not work**

Connection settings and port/whether HTTP or HTTPS is enabled should always match up with the 2N Intercom's own configuration.