AIPHONE

AC SERIES
APPLICATION NOTE

Action Plans and Triggers in AC Nio™

Introduction

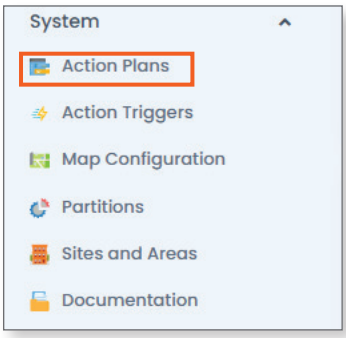
In the AC Nio software, Action plans can be used to create versatile, rule-based automations. Action triggers activate the Action plans, allowing a variety of functions to be carried out automatically. Common uses of Action plans and triggers include:

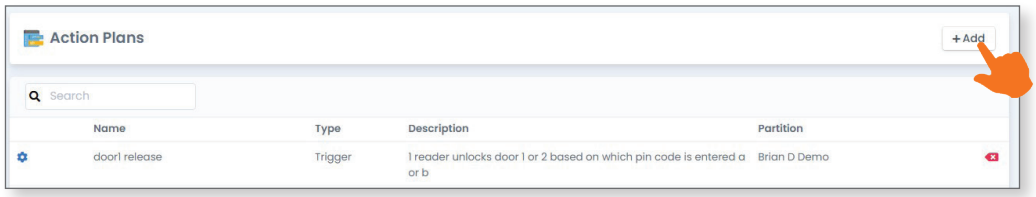
- Single-button or single-card read lockdown
- Customized guard tours
- Remote door unlocking with card read
- Automated occupancy reports (email/SMS)
- Cross-building relay activation
- Camera snapshots on trigger events
- Third-party system HTTP integrations
- Card usage restrictions and auto-disable
- Scheduled report distribution

Action plans are not recommended for critical life safety functions, since they require a connection to a running AC Nio server to work.

Creating Action Plans

Lauch the AC Nio software. Expand **System** in the left side menu and select Action Plans. Click **+Add** to create a new action plan.

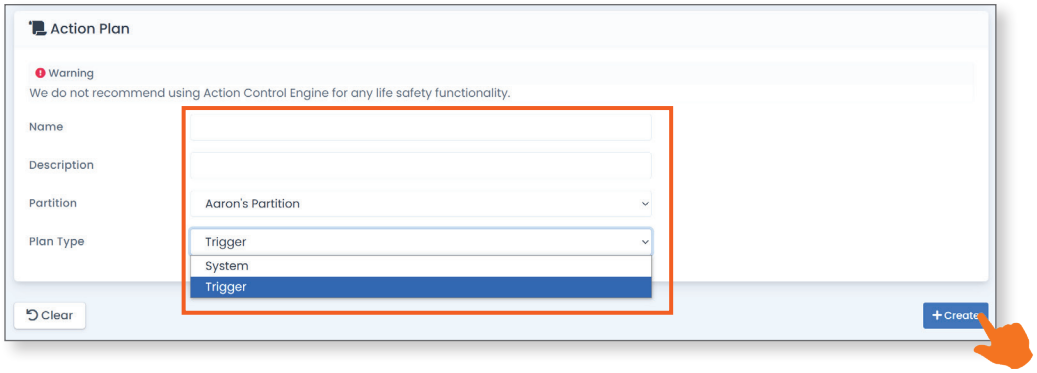




Give the **Action Plan** a name and a description, if desired. Select the partition that will use the plan and choose a **Plan** Type.

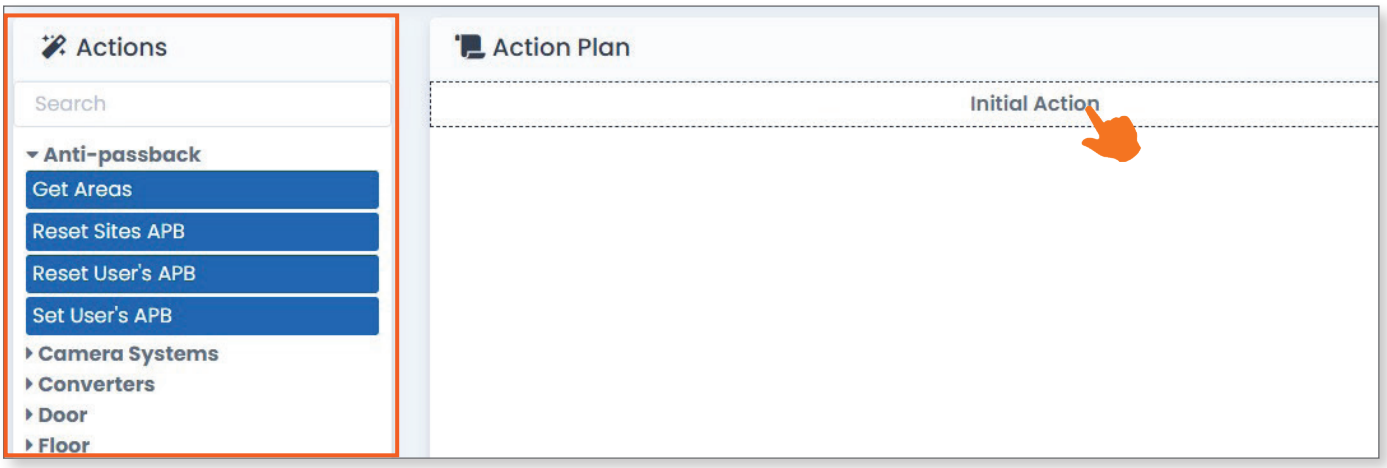
- **Trigger Plan:** Executes in response to a specific event (defined by an action trigger).
- **System Plan:** Executes manually or via API.

Click **+Create** to continue.



Creating Action Plans *(Continued)*

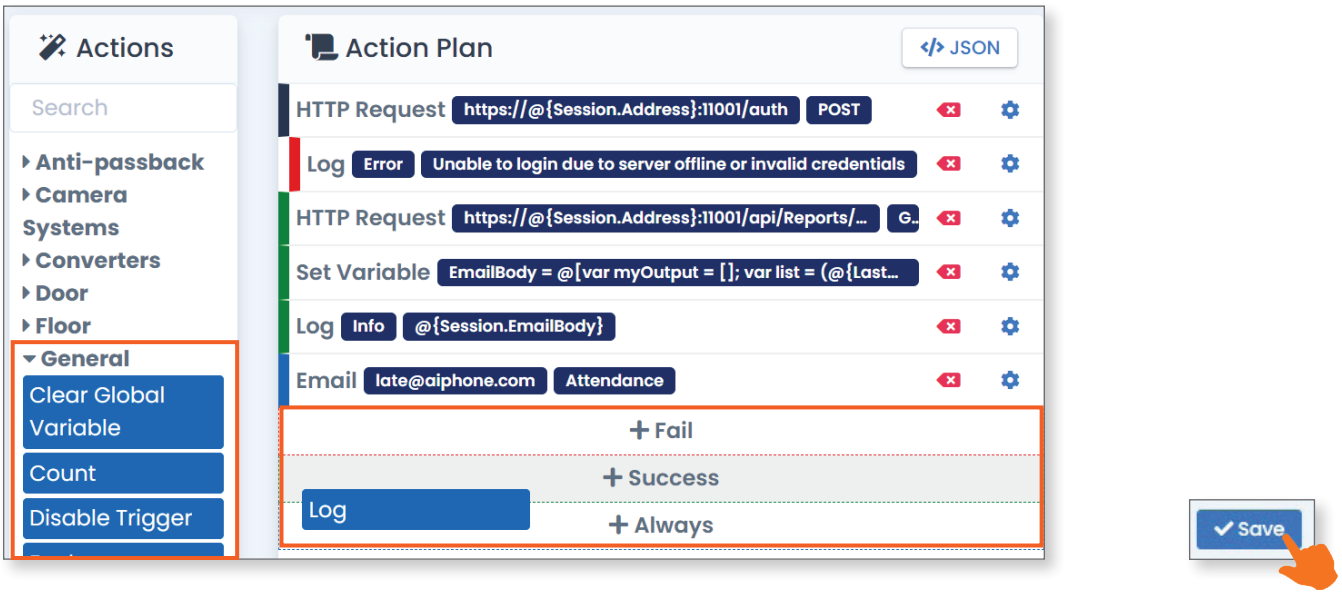
To create the action plan, either click **Initial Action** at the center of the screen to select an action, or drag and drop an item from the **Actions** menu. These categories can be combined in any order, and there are multiple subcategories available under each action.



Action Category	Description
Anti-Passback	Resets area and user locations in the system. Commonly used to reset anti-passback locations.
Camera Systems	Actions that interact with a VMS system.
Converters	Converts numbers or strings into hashes such as MD5 or Base64. Commonly used during authentication with third party systems
Door	Door related actions, including initiating overrides and crisis levels.
Floor	Elevator floor related actions like initiating overrides.
General	Contains actions such as logging, timers, setting variables, if statements, and each statements.
I/O	Initiates override commands to inputs or outputs.
Network	Actions that take place over the network, such as sending emails, HTTP requests, and PING requests.
Panel	Panel specific actions, such as starting the emergency alarm, triggering the piezo speaker, and updating panels.
Reader	Reader specific actions, such as controlling the LED on the reader or the built-in piezo speaker.
SMS Messaging	Sends SMS messages. Current SMS vendors are Clickatell and Twilio.
Triggers	Activates when a specified event happens, such as a door opening or a button being pushed.
User	User specific actions, such as disabling a user or checking if a user is a member of a specific access privilege group.

Creating Action Plans *(Continued)*

Some actions will require parameters to be filled in. Once the initial action is selected, additional actions can be dragged and dropped beneath it to chain multiple actions together. Depending on the action selected, options for **Success**, **Fail**, or **Always** branches will appear. These set whether the action occurs if the previous items fails, succeeds, or if this new action always occurs after the previous action. Once the plan is complete, click **Save**.



Advanced Action Plan Functionality

Certain scripting options for Action Plans involve complex parameters. These allow features such as keeping track of variables, mathematical operations, and comparisons of different items.

Variables:
Action Plans support a variety of variables for flexible scripting.

Session Variables: Temporary, used within the current execution.
Trigger Variables: Based on trigger context (e.g., user or device that triggered the plan).
Last Result Variables: Data from preceding HTTP/PING/Each actions.
Global Variables: Persistent across plans in the same partition.

Syntax: @{Session.VariableName}

Expressions:
Action Plans allow embedded logic using expressions to perform comparisons, arithmetic, and string operations.

Syntax: @[expression]
Examples:
@[100 + 50] → 150,
@[“Text”.length] → 4,
@[100 == 100] → True

If Action:
Executes conditional logic within an Action Plan.

Success Chain: Executed if condition is True.
Fail Chain: Executed otherwise.
Example: @[2 > 1] → triggers a success chain.

Each Action:
Iterates over a list or collection, executing sub-actions for each item. This is useful for processing HTTP responses or bulk operations. An item can be accessed with @{LastResult.Item}, and an index with @{LastResult.Index}.

Advanced Action Plan Functionality *(Continued)*

HTTP Action:
Integrates the AC Nio™ software with external systems using standard web APIs.

Steps:
1) Drag HTTP Request action into a plan.
2) Define an endpoint, a method (GET, POST, etc.), a body, a header, and a timeout.

The responses can be parsed with these instructions:

- @{LastResult.StatusCode}
- @{LastResult.Content}

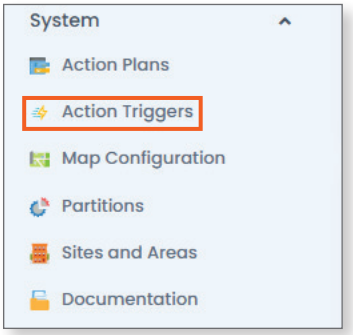
For more uses of HTTP Actions, view the AC Nio software API documented at: https://[ServerIP]:11001/apidocs

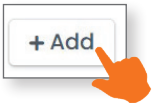
Executing Action Plans:
Action plans can be activated either manually through the AC Nio software, or programmatically via an API. Use the following format to trigger the plan programmatically:
POST https://[ServerIP]:11001/api/ActionPlans/{id}/Exec

Monitoring & Reporting:
The execution of plans can be viewed on the Monitoring screen in the AC Nio software. The history can be viewed on the Action Plan Activity Report.

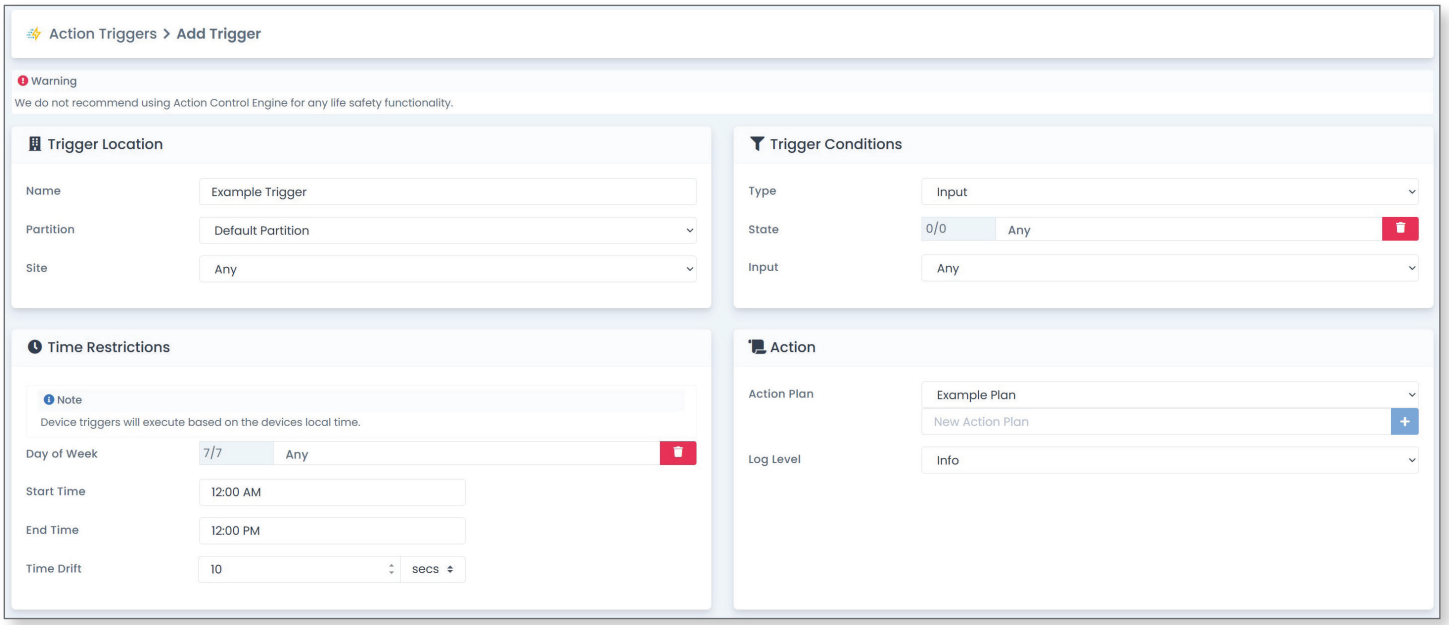
Creating Action Triggers

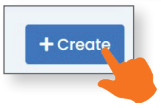
Action Triggers define when an Action Plan or another typer of trigger is activated. To create a trigger, navigate to **Action Triggers** on the left side menu. This will display a list of existing triggers. To create a new trigger, click **+Add**.





Assign the trigger a name and a partition under **Trigger Location**. Set the **Trigger Conditions** that will activate the triggers, then configure the **Time Restrictions** to set when the trigger will be active. Assign to the trigger under Action Plan under **Action**.
Click **+Create**.





Click **Continue Configuration** on the pop-up window, then click **Save** to finalize the trigger. Settings will not need to be uploaded to the access control hardware, since Action Plans and Action Triggers are managed directly by the AC Nio™ software.