

# Intelli-M Access Rules Engine

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The purpose of the rules engine is to provide capabilities that users can build up into features providing as much flexibility as possible to encompass the many variations an access control feature can have. Every rule is constructed in the same fashion making it easy to learn how to build & manage rules.

This document describes the rules engine in general. For help on specific needs, consult the feature recipe cards on our web site at [www.infinias.com](http://www.infinias.com).

## Concepts

The rules engine consists of three main concepts – Events, Filtering and Actions. Every event is checked to see if one or more rules apply to that event. If they do, then the corresponding action for the rule is executed.

## Events

Any event coming through the system. This can be events generated by an eIDC, by Intelli-M Access or by an external 3<sup>rd</sup> party system. There is an API for submitting events into the rules engine.

## Filtering

- Schedule
- Group
- Zone
- Door
- Reader
- Event – Type of event
- Action – What action was taken at the door. i.e. Granted, denied, etc.
- Device – Device selection
- Device I/O – Inputs and/or outputs for a selected device

## Actions

- Access Privilege – An access privilege is what lets a cardholder through a door on a schedule. This rule is special in that it is downloaded to the controller and executed locally.
- Event Management – Determines if an event should be shown on the events page. Events are always stored in the database regardless of whether they are shown or not.
- Alarm Management – Any event that meets the criteria of an alarm management rule gets displayed as an alarm on the events page.
- Email – Sends an e-mail for any qualifying event
- Elevator – Triggers one or more outputs on the IO Device (turning buttons on in an elevator cab)
- Lock Zone – Overrides the unlock schedule for a zone. Valid cardholders can still gain access. This stays in effect until a revert to schedule is issued.

- Lockdown Zone – Disables controllers for a zone. Readers do not work nor do REX's
- Unlock Zone – Unlocks the doors in a zone, overriding the current lock schedule. The doors will stay unlocked until a revert to schedule is issued.
- Revert Zone – Returns a zone to current unlock schedule (locked or unlocked) This is the counterpart to Lock Zone and Lockdown Zone

## Examples

Below are two alarm management examples. The first will make any access denied event on any door at any time an alarm in the UI. The second will make a Door Forced Open event on any door leading into the Engineering Lab during the Office Hours schedule an alarm in the UI.

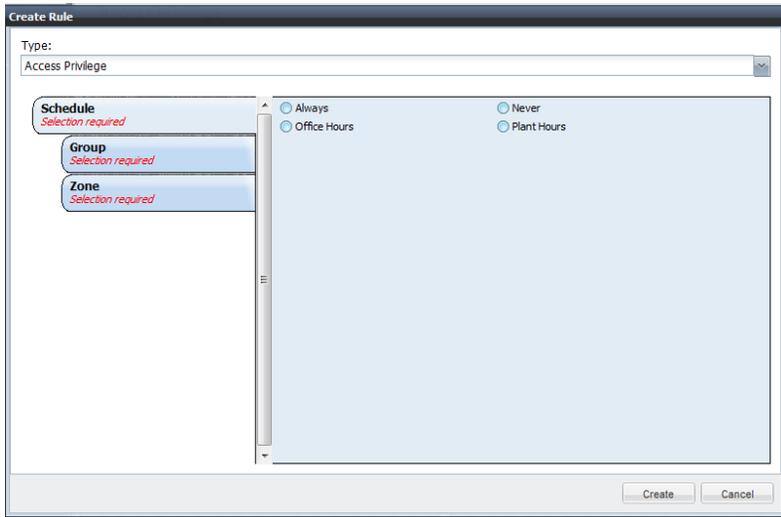
As can be seen, this provides tremendous granularity in configuring how Intelli-M Access responds to events.

### Alarm Management

Schedule Action	Always Denied	Schedule Zone Event	Office Hours Engineering Lab ForcedOpen
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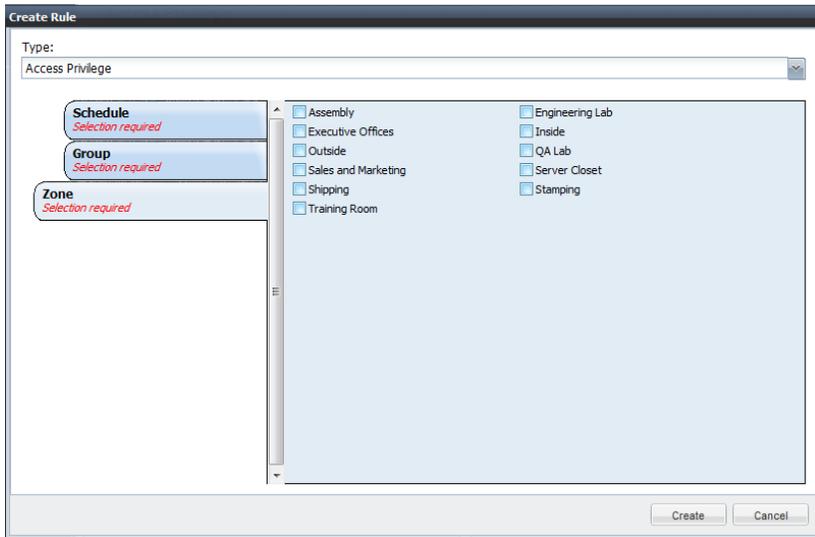
# Event Actions

## Access



This is a special rule. The Access Privilege rule is downloaded to the controller which then grants or denies access to the door locally. The result is an event sent up to Intelli-M Access that other rules can use.

For some fields such as schedule shown above, only one choice can be made. For others such as Zone, multiple Zones can be selected when creating a rule. This will create one rule per Zone so that they can each be edited or deleted individually.



## Event Management

The screenshot shows the 'Create Rule' dialog box for 'Event Management'. The 'Type' dropdown is set to 'Event Management'. On the left, there are five sections: 'Schedule' (with a red 'Selection required' note), 'Group', 'Zone', 'Event', and 'Action'. The main area contains a list of 30 event types, each with a checkbox. The 'Schedule' section is currently selected, and all checkboxes in the list are unchecked. At the bottom right, there are 'Create' and 'Cancel' buttons.

Event Type	Selected
AntiPassbackViolation	<input type="checkbox"/>
ConditionNotMet	<input type="checkbox"/>
CredentialNotYetActive	<input type="checkbox"/>
DoorContactRestored	<input type="checkbox"/>
Heartbeat	<input type="checkbox"/>
Initializing	<input type="checkbox"/>
Input1Restored	<input type="checkbox"/>
Input2Restored	<input type="checkbox"/>
Input3Restored	<input type="checkbox"/>
Input4Restored	<input type="checkbox"/>
InsufficientReason	<input type="checkbox"/>
InvalidPIN	<input type="checkbox"/>
Lockdown	<input type="checkbox"/>
Offline	<input type="checkbox"/>
Output1Active	<input type="checkbox"/>
Output2Active	<input type="checkbox"/>
Output3Active	<input type="checkbox"/>
Output4Active	<input type="checkbox"/>
Output5Active	<input type="checkbox"/>
Output6Active	<input type="checkbox"/>
APBViolation	<input type="checkbox"/>
CredentialExpired	<input type="checkbox"/>
DeviceTamper	<input type="checkbox"/>
ForcedOpen	<input type="checkbox"/>
InAlarm	<input type="checkbox"/>
Input1Active	<input type="checkbox"/>
Input2Active	<input type="checkbox"/>
Input3Active	<input type="checkbox"/>
Input4Active	<input type="checkbox"/>
InsufficientPrivileges	<input type="checkbox"/>
InvalidID	<input type="checkbox"/>
LeftOpen	<input type="checkbox"/>
Normal	<input type="checkbox"/>
Online	<input type="checkbox"/>
Output1Inactive	<input type="checkbox"/>
Output2Inactive	<input type="checkbox"/>
Output3Inactive	<input type="checkbox"/>
Output4Inactive	<input type="checkbox"/>
Output5Inactive	<input type="checkbox"/>
Output6Inactive	<input type="checkbox"/>

This rule type determines what events show up in the UI. This allows a system to be configured to show all events, or just key events based on who generated the event, where the event was generated, when the event took place or what type of event and what the result was.

The default event management rule provided in Intelli-M Access sets the schedule to always and selects nothing else. This means that every event will be shown in the UI.

The most common use of this rule is to filter the events shown in the UI down to key events such as events where the action was Granted and Denied, or event types of ForcedOpen, CredentialExpired, LeftOpen, ValidCredential, etc.

Adding or customizing the Event Management rules by schedule can allow for different levels of eventing during the day when the building is in operation and nights and weekends when the building is empty. A door held open event in the shipping bay during the day may not be of interest at all, but when the building is closed that same event becomes much more serious

## Alarm Management

The screenshot shows a 'Create Rule' dialog box with a title bar. Below the title bar, there is a 'Type:' label and a dropdown menu currently set to 'Alarm Management'. To the left of a large, empty light-blue area, there is a vertical list of six blue buttons: 'Schedule', 'Group', 'Zone', 'Door', 'Event', and 'Action'. The 'Schedule' button is highlighted with a red border and has the text 'Selection required' written in red below it. At the bottom right of the dialog box, there are two buttons: 'Create' and 'Cancel'.

Alarm Management presents the same options as Event Management. The difference is in the resulting action. Alarm management presents the event in the UI highlighted in red to make it stand out.

If an event is covered by an Alarm Management rule, it will be shown in the UI, so an Event Management rule is not required as well.

## Email

The screenshot shows a 'Create Rule' dialog box. The 'Type' dropdown is set to 'Email Event'. On the left, there are tabs for 'Schedule', 'Zone', 'Door', 'Event Reason', 'Event Action', and 'Group to receive email'. The 'Group to receive email' tab is selected and shows a list of departments with checkboxes. The departments listed are: Accounting, Assembly Shift 2, Customer Service, Executive, IT - Networking, IT - Workstation, Product Management, Sales, Software Engineering, Stamping Shift 2, Training, Assembly Shift 1, Cafe Services, Everyone, Hardware Engineering, IT - Server, Marketing, Quality Assurance, Shipping, Stamping Shift 1, Technical Support, and Welding Shift 1. At the bottom right, there are 'Create' and 'Cancel' buttons.

The e-mail rule causes an e-mail to be sent to the recipient group for each event that matches the rule. The typical use of this rule is to actively notify when something happens.

To use this rule, you must have set up your SMTP mail information under *'configuration – system settings'* and for each person to receive notification, you must have entered an e-mail address on the Person edit dialog under the Contact tab. If you enter both Primary and Secondary e-mail addresses, the event will be sent to both addresses.

This rule can also be used to send SMS messages for more urgency. To do this, instead of entering the user's e-mail address on the Person page, enter their SMS 'e-mail' address. Below are a number of common carriers and the formatting of the SMS address.

Be careful that these messages will result in any standard SMS charges and that a message is sent for each event that applies, so be careful to set up the rule to be specific enough as to result in a limited number of messages.

### Alltel

[10-digit phone number]@message.alltel.com  
Example: 2125551212@message.alltel.com

### AT&T (formerly Cingular)

[10-digit phone number]@txt.att.net  
Example: 2125551212@txt.att.net

For multimedia messages, use [10-digit-number]@mms.att.net  
Example: 2125551212@mms.att.net

### **Boost Mobile**

[10-digit phone number]@myboostmobile.com  
Example: 2125551212@myboostmobile.com

### **Cricket Wireless**

[10-digit phone number]@sms.mycricket.com  
Example: 1234567890@sms.mycricket.com

For multimedia messages: [10-digit phone number]@mms.mycricket.com  
Example: 1234567890@mms.mycricket.com

### **Nextel** (now part of Sprint Nextel)

[10-digit telephone number]@messaging.nextel.com  
Example: 7035551234@messaging.nextel.com

### **Sprint** (now Sprint Nextel)

[10-digit phone number]@messaging.sprintpcs.com  
Example: 2125551234@messaging.sprintpcs.com

### **T-Mobile**

[10-digit phone number]@tmomail.net  
Example: 4251234567@tmomail.net

### **Verizon**

[10-digit phone number]@vtext.com  
Example: 5552223333@vtext.com

### **Virgin Mobile USA**

[10-digit phone number]@vmobl.com  
Example: 5551234567@vmobl.com

### **Other U.S. and Canadian carriers:**

Bell Canada: [10-digit-phone-number]@txt.bellmobility.ca

Centennial Wireless: [10-digit-phone-number]@cwemail.com

Cellular South: [10-digit-phone-number]@csouth1.com

Cincinnati Bell: [10-digit-phone-number]@gocbw.com

Metro PCS: [10-digit-phone-number]@mymetropcs.com or [10-digit-phone-number]@metropcs.sms.us

Qwest: [10-digit-phone-number]@qwestmp.com

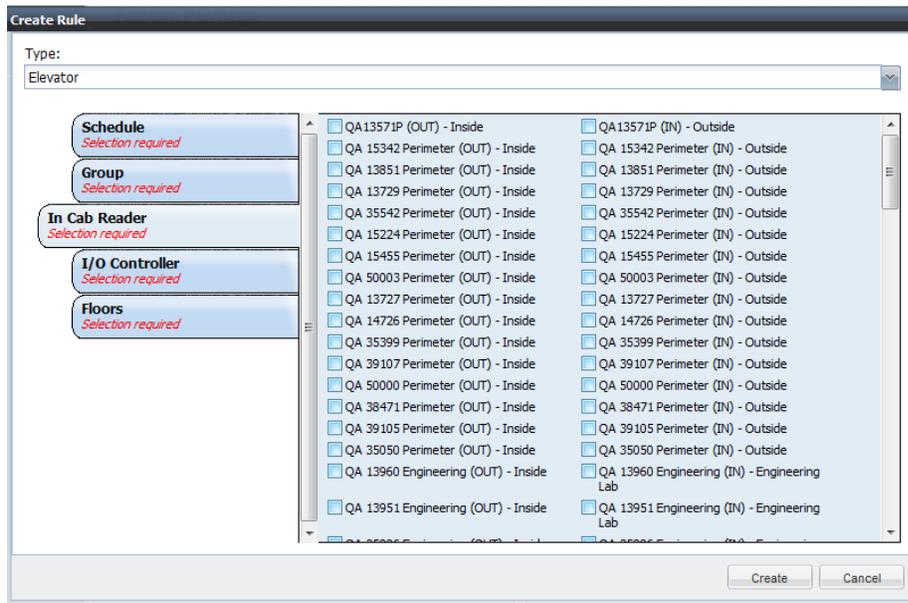
Rogers: [10-digit-phone-number]@pcs.rogers.com

Suncom: [10-digit-phone-number]@tms.suncom.com

Telus: [10-digit-phone-number]@msg.telus.com

U.S. Cellular: [10-digit-phone-number]@email.uscc.net

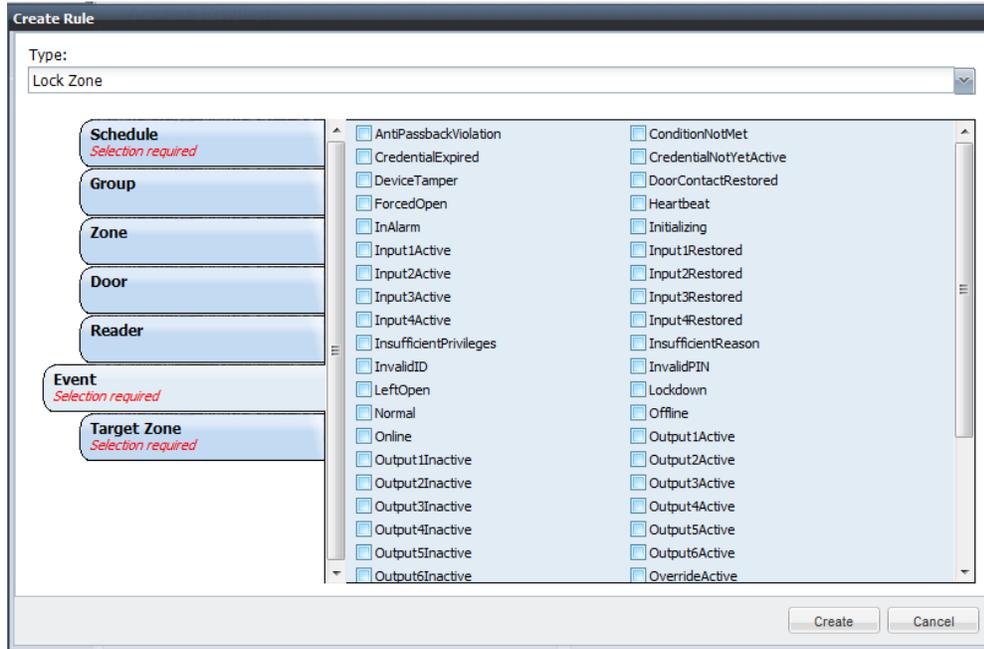
## Elevator



Elevator control is set up via the Elevator rule. Set the Door Reader to the in-cab reader, select the group and then select the IO device and appropriate outputs for that group. When a cardholder swipes their card at the in-cab reader, the appropriate outputs will be closed and floor buttons activated for selection.

The buttons will remain lit until the timeout and then turn back off based on a timeout value.

## Lock Zone



Lock Zone will override the unlock schedule for all doors granting access into a selected zone. Cardholders with a valid credential will still be able to present their card and be granted access into the zone.

This feature can be used in a number of ways.

- Associated with a button wired to an input on a controller to provide a panic button to lock a zone
- Used in conjunction with Revert Zone to deliver a flexible First-In feature. To do this, set up Lock Zone to take effect based on the ScheduleActiveInMinute event and using a First In schedule that creates the window for an action to allow the doors to unlock on schedule. This will then override the unlock schedule one minute before it takes effect. Then create a second rule using Revert Zone that reverts to schedule using the same First In Schedule based on a valid action (valid card swipe, button press, etc.)
- Based on a valid card swipe at a special reader or using a special card at any time to lock a zone after an event. (Use

## Lockdown Zone

The screenshot shows a 'Create Rule' dialog box with 'Lockdown Zone' selected in the 'Type' dropdown. On the left, there are several configuration sections: 'Schedule' (with a red 'Selection required' note), 'Group', 'Zone', 'Door', 'Reader', 'Event' (with a red 'Selection required' note), and 'Target Zone' (with a red 'Selection required' note). The main area is a list of checkboxes for various zones, including QA 0 Engineering, QA 12247 QA Lab, QA 12255 Executive, QA 12269 Shipping, QA 12277 Shipping, QA 13569 QA Lab, QA 13593 QA Lab, QA 13597 Assembly, QA 13622 Assembly, QA 13651 QA Lab, QA 13662 Server, QA 13663 Server, QA 13670 Server, QA 13681 Assembly, QA 13687 Executive, QA 13694 Assembly, QA 13710 QA Lab, QA 13713 Executive, QA 13718 Shipping, QA 13719 Executive, QA 13724 Training, QA 13727 Perimeter, QA 13729 Perimeter, QA 13730 Stamping, QA 13800 Stamping, QA 13808 Stamping, QA 13809 Shipping, QA 13830 QA Lab, QA 13839 Server, QA 13848 Shipping, QA 13851 Perimeter, QA 13853 QA Lab, QA 13942 Sales, QA 13951 Engineering, QA 13952 Stamping, QA 13954 Training, QA 13956 Training, QA 13960 Engineering, QA 13962 Executive, and QA 13967 QA Lab. 'Create' and 'Cancel' buttons are at the bottom right.

Lockdown Zone should be used with discretion. It differs from Lock Zone in that no one can get through the door while Lockdown is active. This is meant for situations where all ingress and egress is to be prevented. The strike is disabled in the controller so no electronic method of unlocking will work. This includes card swipes, REX buttons or PIR's. Only mechanical exit devices that do not go through the controller will work.

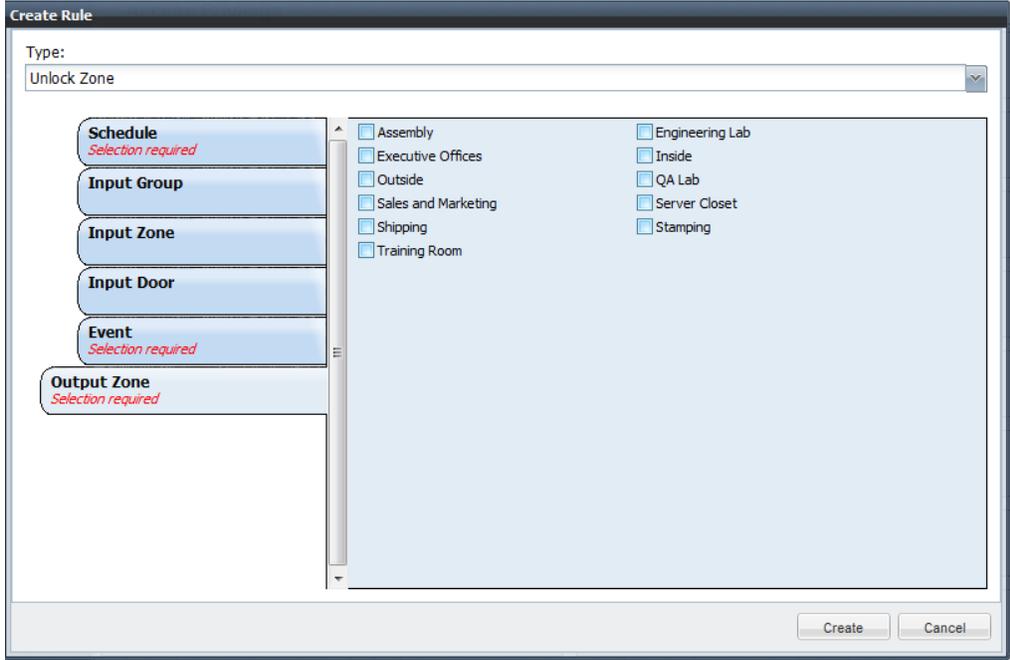
## Revert Zone

The screenshot shows a 'Create Rule' dialog box with 'Revert Zone' selected in the 'Type' dropdown. On the left, there are several configuration sections: 'Schedule' (with a red 'Selection required' note), 'Group', 'Zone', 'Door', 'Reader', 'Event' (with a red 'Selection required' note), and 'Target Zone' (with a red 'Selection required' note). The main area is a list of checkboxes for various zones, including Assembly, Executive Offices, Engineering Lab, Inside, Outside, QA Lab, Sales and Marketing, Server Closet, Shipping, Stamping, and Training Room. 'Create' and 'Cancel' buttons are at the bottom right.

Revert Zone returns a zone to whatever the current unlock schedule is supposed to be. If a zone is locked down while an unlock schedule is active, and the revert is issued after the unlock period has ended, then the doors will stay locked.

If Lockdown Zone is being reverted then the Rex's and readers will start granting access again.

## Unlock Zone



Unlock zone will override a lock schedule unlocking the doors. Used in conjunction with Lock Zone, the ability to lock and unlock a zone can be given to a group (e.g. School Caretaker) who can unlock a zone for an event and then lock it back up after the event is over by using different cards or different readers.