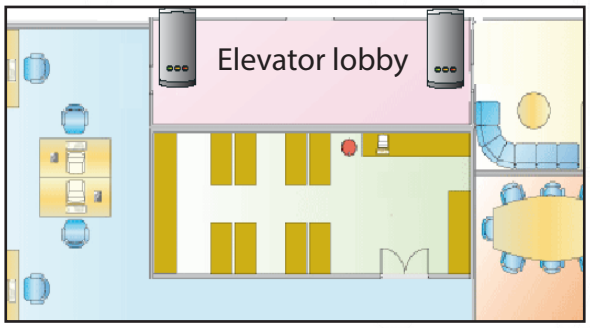
Integrating Net2 with Elevator control systems

Elevator control options

- Lobby doors

The best access control is to secure the doors that lead to and from the elevator floor lobby. An elevator is very much a public space and it is normal for one elevator to carry several people to a variety of floors during a single trip up and down the building. An intruder does not need to press a call or floor button to be carried to almost any floor by other people's actions.

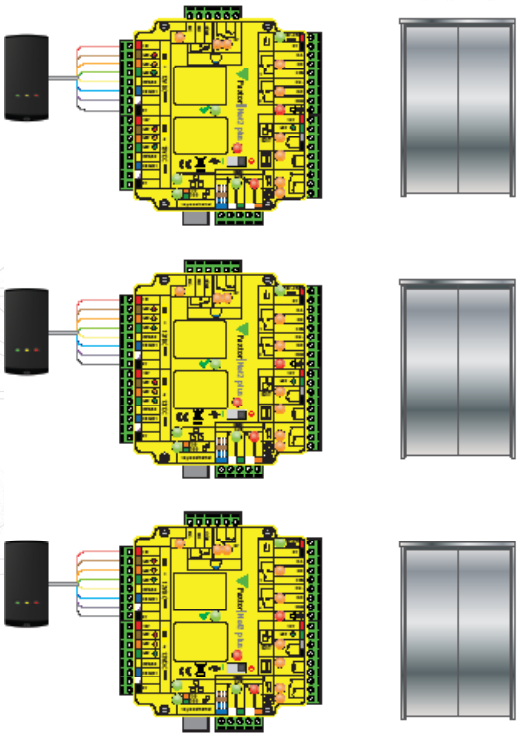


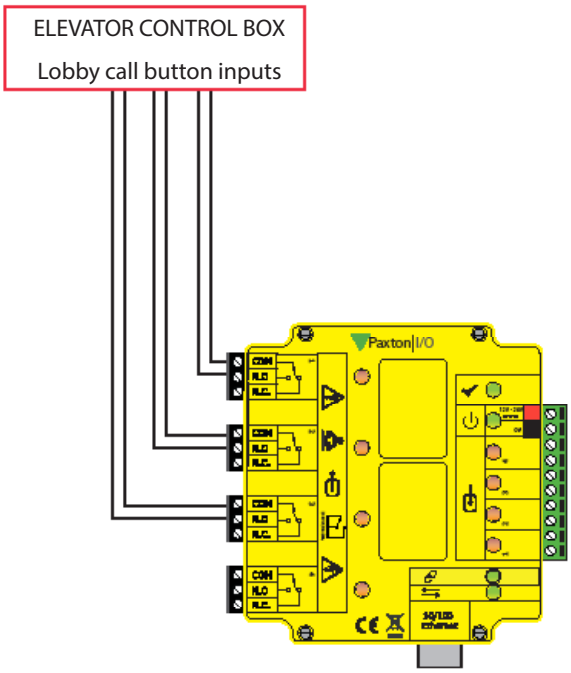
Unfortunately, open plan office design often has the elevator opening directly into the office area with no lobby.

- Elevator call button control

This treats the elevator door as if it was a normal office door. In its simplest form, this restricts those people allowed to call the elevator and therefore use it to visit other floors.

The call button on each floor can be replaced by a proximity reader. This is connected to a local ACU that will check the card for validity and then either close its relay to simulate the original call button or provide input for a Net2 I/O relay board located next to the elevator control box to provide the call button signal.





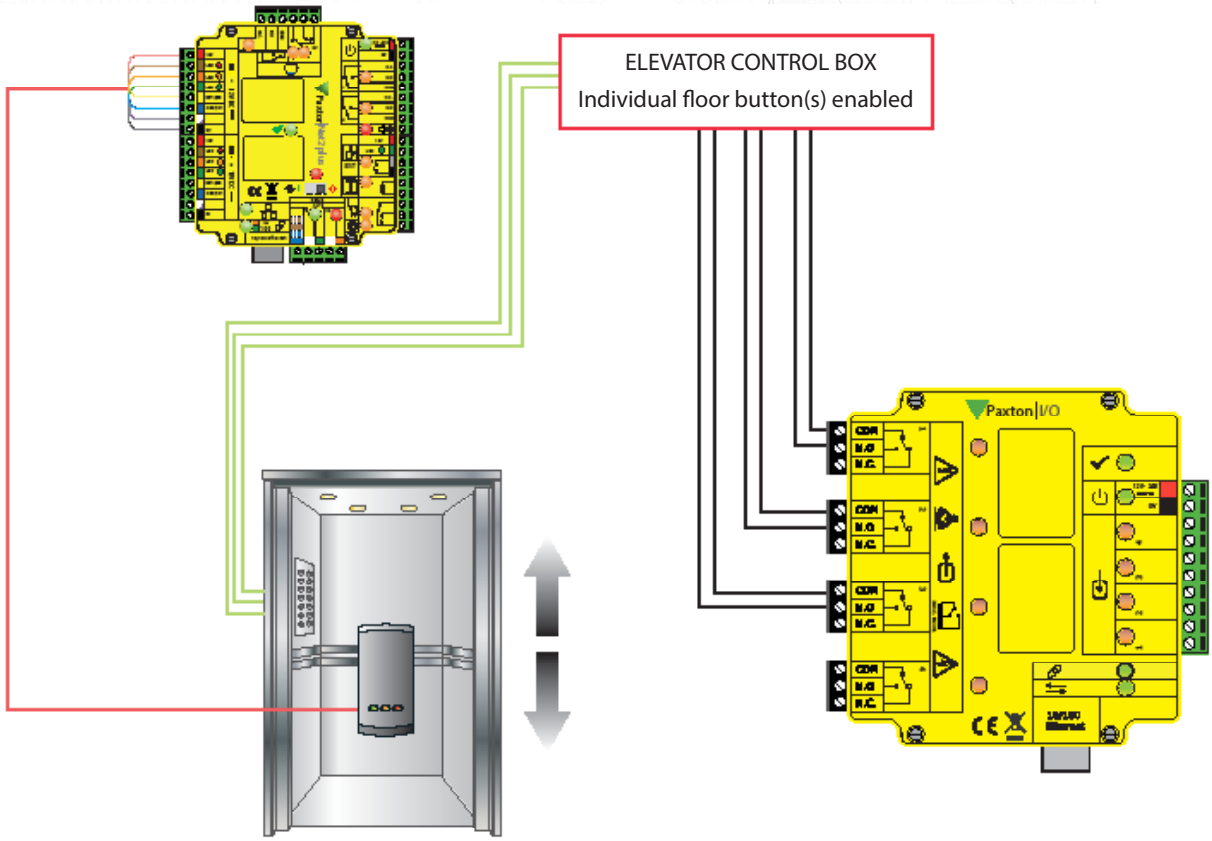
- Elevator floor button control
This method gives the most control and will cover most situations.

The user has free access to the elevator but has to present a user card to the reader inside the elevator before any of the restricted floor buttons are available.

The reader requires a protected reader cable running up to the elevator control room (max 100 meters). A single ACU then determines whose token has been presented and initiates any matching T&A rules.

An I/O relay is required for each floor button that you are controlling (4 relays per I/O board). As one rule can activate more than one relay at the same time, a user will be given a choice of floor buttons available depending on the rule programming.

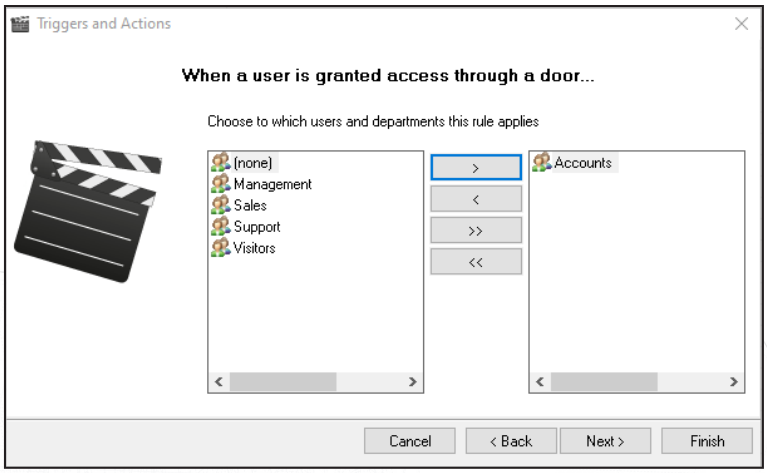
If the elevator access is in a public area, then a combination of the above methods may be desirable.



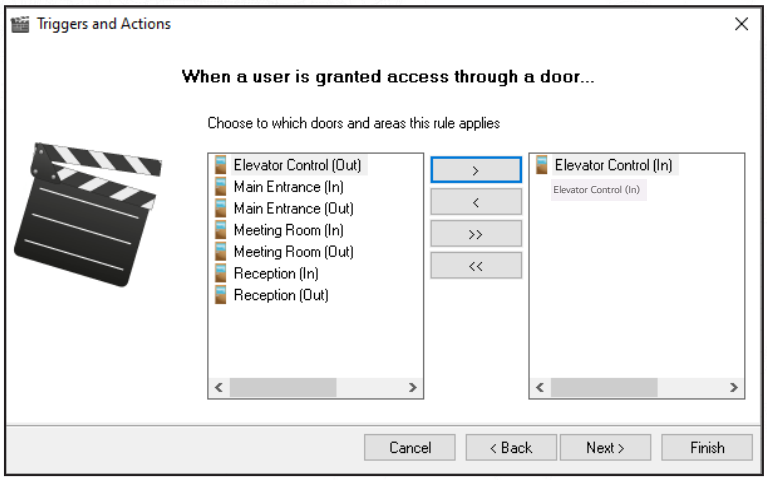
Software configuration - Elevator floor button option

The I/O boards must be set up and configured before appropriate Triggers and Action rules can be set up. A rule must be set up for each floor grouping that you require (All floors, 1st floor only, etc).

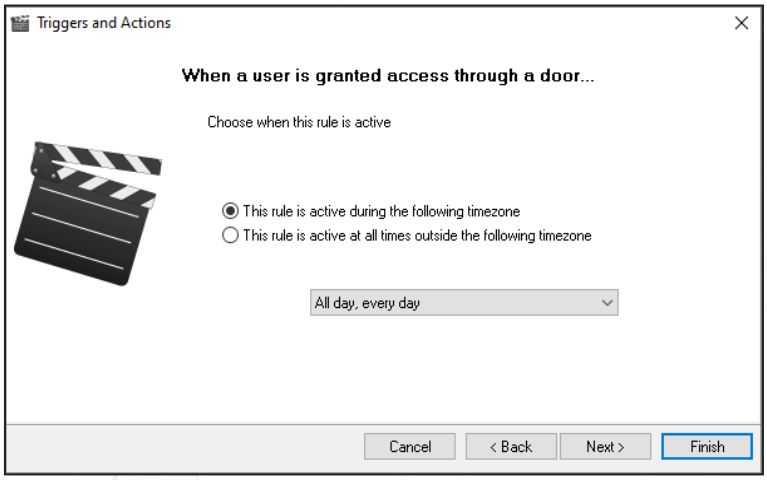
Set up a rule for 'When a user is granted access through a door'. This rule will run when a valid token has been presented to the 'elevator' reader.



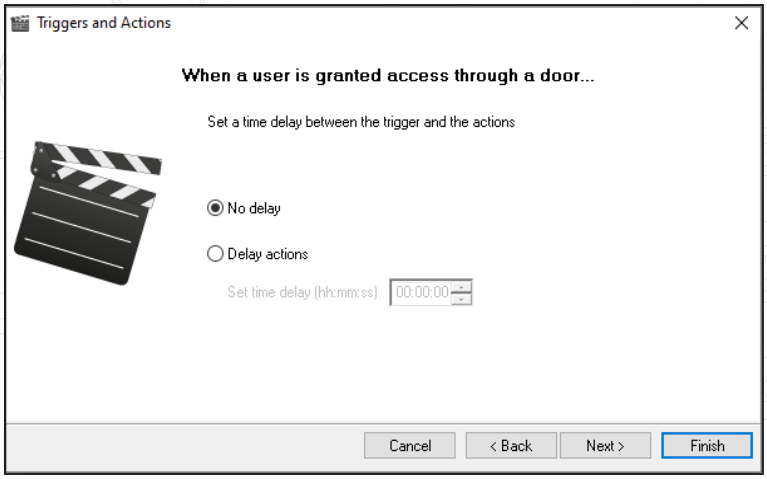
Select the users who need to run this rule.



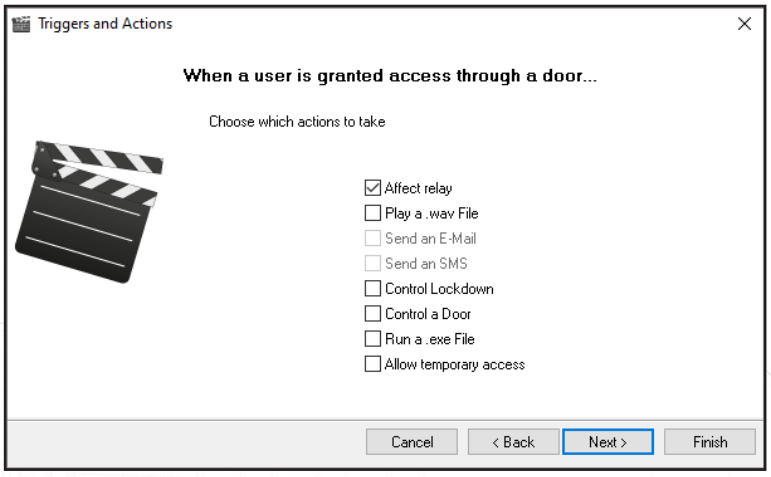
Select the reader they will use (e.g. Elevator Control (In)).



Select the timezone when this will apply.

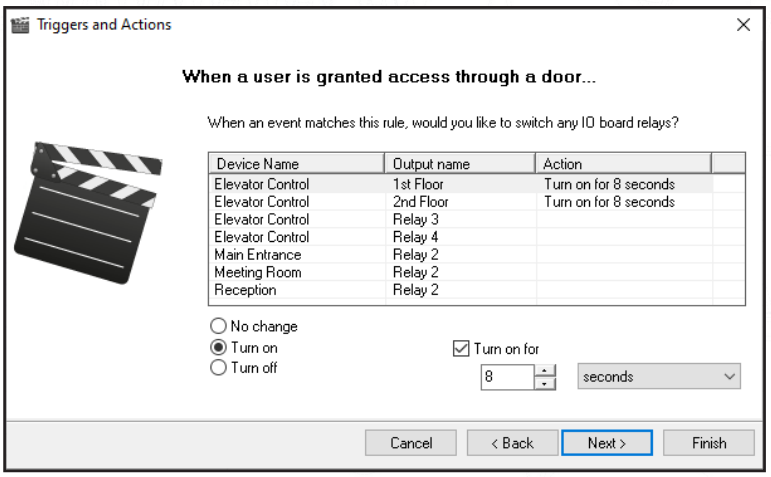


Select 'No delay'

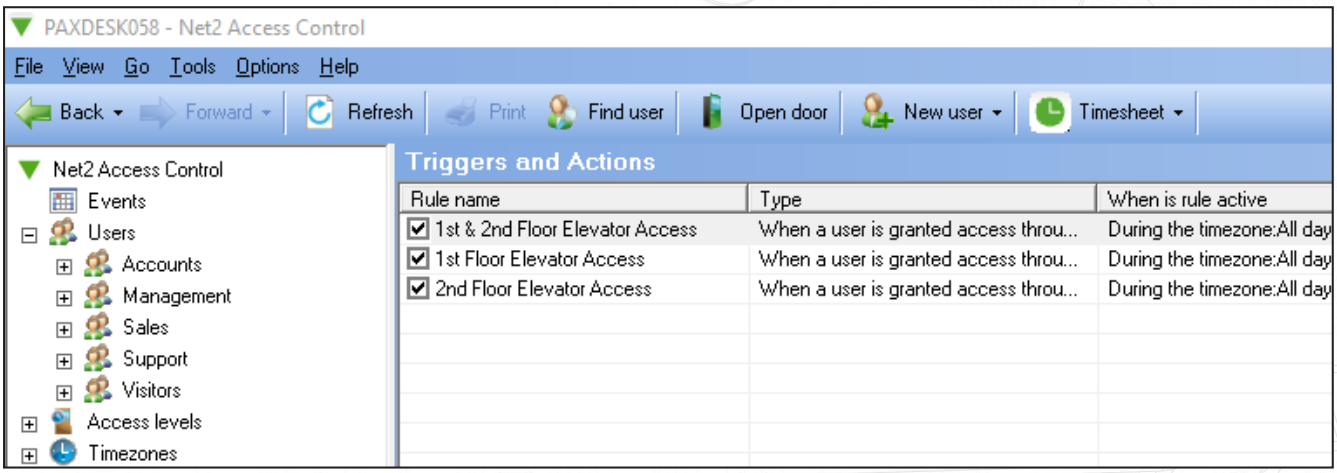


Select 'Affect relay'

Determine the elevator buttons that these users may require and turn on the appropriate relays to enable the buttons for long enough for the user to decide which button to press (set here for 8 secs).



Set up a rule for each of the various floor button combinations as required.



We do not recommend more than 20 x I/O to be used as PC speed and network limitation may cause reliability issues.

Important

For Triggers and Actions to function correctly, the server must be running and communicating with all control units and I/O boards.

Important information on Elevator Integration

Timing

For Triggers and Actions to function correctly, the server must be running and communicating with all control units and I/O boards. As the I/O Board contains no on-board memory, it is reliant on communication from the Net2 server to run the trigger and action rules.

READER>CONTROLLER>SERVER>I/O BOARD

Because of this, you may experience a small delay in the illumination of the floor buttons within the elevator car following the presentation of a card. The delay can be up to 10 seconds, but in most cases the floor buttons will light within 7 seconds. External factors, such as noise affecting cable signals in the elevator shaft, can also cause delays in the button responses.

Cabling

Installers should refer to a cable specialist for an elevator grade equivalent cable of Belden CR9540. Alternatively, ACUs can be mounted on the elevator car with an elevator grade Cat5 cable used to connect them.

Paxton have discussed the issue of specifying the relevant reader cable for elevator shafts with a cable specialist. They advised they would never sign off a generic cable for use with any system as there are too many site-specific elements to take account of, such as:

- Temperature
- Voltage
- Cable flexing - Some cable will break with excessive flexing
- Location of the cable - in or out of the Elevator
- Do they require a screen?
- Core colors
- Sheath type

For example, silicone cable is very heat resistant however the sheath is very thin and can break easily in the wrong environment.

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