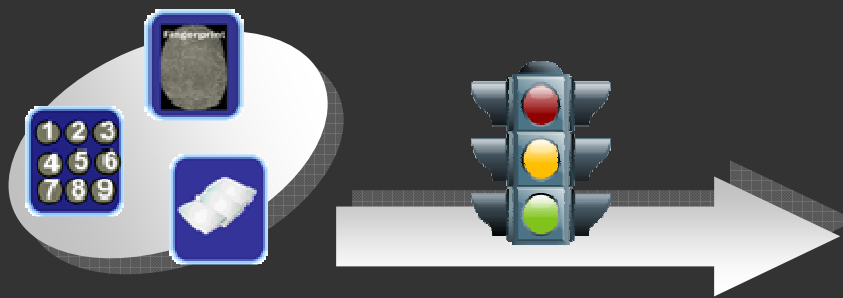


Setting Up Access Options: Time Zone and Access Combination Features



Access Control Readers, be it Fingerprint, PIN or RFID Card devices, all have the common authentication criteria; i.e. to validate a user's presented access token and grant the access if the token has been pre-registered. Access Tokens can be Biometrical (Fingerprint or Iris), Physical (Proximity Card) or Logical (PIN or User ID/Password pair) Objects. Users who present a valid access token are regarded as a registered user. In this respect, only biometric authentication is the only secure method to validate if a user possessing the access token is a rightful owner. In the absence of other access restriction, registered users are granted with access by default. However, if a user ID is flagged as 'Disabled' via software application, the access is permanently barred until the status is reinstated. The Reader denies access with "Disabled User" screen display if a disabled user attempts to gain access.

Fingerprint Reader provides 'Access Options' configuration for setting up Time Zone (TZ) and Access Combination (Access Comb) features. Each TZ defines daily access time slot, 7-day week. Multiple or maximum three time zones can be grouped as one Time Zone Group (TZG) to allow few access time slots per day. There are total 50 TZ and 5 TZG supported per Reader.

When defining the TZ, the range of time specified can result in three possible actions by Reader:

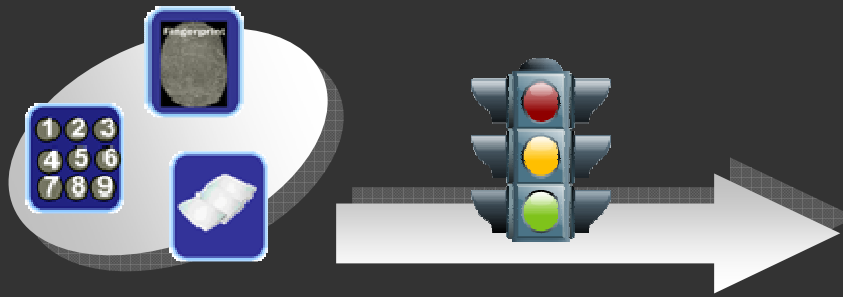
Access Time Window	Example	Result
{Time 1} - {Time 2}, where Time2 > Time1	01:00 - 17:00	"Access Permitted" from 1am to 5pm
{Time 1} - {Time 2}, where Time2 < Time1	04:00 - 01:00	"Access Denied" for whole day
{Time 1} - {Time 2}, where Time1="00:00" and Time2="23:59"	00:00 - 23:59	"Access Permitted" for whole day

For ease of configuration management, users are assigned with TZG. The effective accessibility is determined by the result of Boolean logical "OR" of each and every TZ time slot.

0 OR 0 = 0
0 OR 1 = 1
1 OR 0 = 1
1 OR 1 = 1

The 'OR' Logical Table

Setting Up Access Options: Time Zone and Access Combination Features



Assuming '1' represents 'access permitted' and '0' is 'deny access', an example below illustrates how the effective access time window can be determined when grouping time zones. After the fingerprint Reader verifies a registered user's access token, the TZG assigned will be checked. If the access time is outside the permitted time window or not permitted, "Time Period Deny" message is displayed.

Time Zone	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1	14:00-17:00	14:00-17:00	14:00-17:00	14:00-17:00	14:00-17:00	14:00-17:00	14:00-17:00
2	08:00-10:00	08:00-10:00	08:00-10:00	08:00-10:00	08:00-10:00	08:00-10:00	08:00-10:00
3	00:00-23:59	00:00-23:59	00:00-23:59	00:00-23:59	00:00-23:59	00:00-23:59	00:00-23:59
4	23:59-00:00	23:59-00:00	23:59-00:00	23:59-00:00	23:59-00:00	23:59-00:00	23:59-00:00

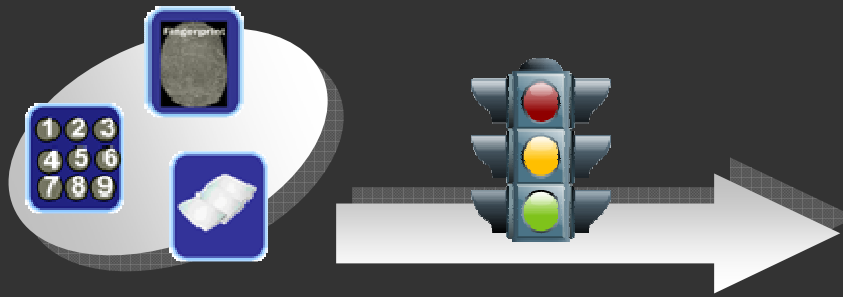
TZ Group 1 (TZ3 + TZ4)	Access Granted 24-hour	Access Granted 24-hour	Access Granted 24-hour	Access Granted 24-hour	Access Granted 24-hour	Access Granted 24-hour	Access Granted 24-hour
TZ Group 2 (TZ1 + TZ2)	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm
TZ Group 3 (TZ1 + TZ2 + TZ3)	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm	Access Permitted Time Window: 8am-10am & 2pm-5pm
TZ Group 4 (TZ4)	Access Deny 24-hour	Access Deny 24-hour	Access Deny 24-hour	Access Deny 24-hour	Access Deny 24-hour	Access Deny 24-hour	Access Deny 24-hour

An Example of Time Zone Group Configuration

Access Combination (Access Comb), as the name implied, requires authentication of two or three users from each time zone group. Each user can authenticate with the same or different access tokens. The effective accessibility is determined using logical 'AND' of all users' access permission at the time of access. There are total 10 'Access Comb' settings per Reader.

Setting Up Access Options: Time Zone and Access Combination Features

Access Options



0 AND 0 = 0
 0 AND 1 = 0
 1 AND 0 = 0
 1 AND 1 = 1

The 'AND' Logical Table

Access Combination	Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
Access Comb 1 (TZG1 + TZG2)	Access Permitted with each user from TZG1 and TTZG2 being authenticated Time Window: 8am-10am & 2pm-5pm	Access Permitted with each user from TZG1 and TTZG2 being authenticated Time Window: 8am-10am & 2pm-5pm	Access Permitted with each user from TZG1 and TTZG2 being authenticated Time Window: 8am-10am & 2pm-5pm	Access Permitted with each user from TZG1 and TTZG2 being authenticated Time Window: 8am-10am & 2pm-5pm	Access Permitted with each user from TZG1 and TTZG2 being authenticated Time Window: 8am-10am & 2pm-5pm	Access Permitted with each user from TZG1 and TTZG2 being authenticated Time Window: 8am-10am & 2pm-5pm	Access Permitted with each user from TZG1 and TTZG2 being authenticated Time Window: 8am-10am & 2pm-5pm
Access Comb 2 (TZG3 + TZG4)	Access Denied 24-hours	Access Denied 24-hours	Access Denied 24-hours	Access Denied 24-hours	Access Denied 24-hours	Access Denied 24-hours	Access Denied 24-hours

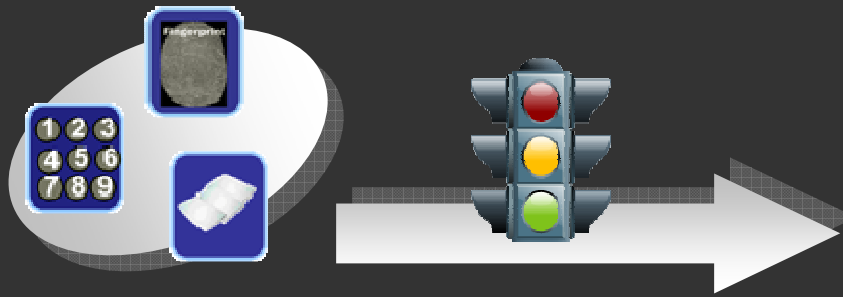
Care must be taken to avoid conflicting TZ Group Access Time Window. An example below, Access Comb 2 is inadvertently locked out Time Zone Group 3 and 4 users from accessing. Any TZG is not setup in the Access Comb table will result in no access.

Examine the Access Combination setting for a Reader below. Assuming users assigned to TZG6, TZG7, TZG8 and TZG9 have access permission for 24 x 7.

Access Comb 1	6,7
Access Comb 2	8

Setting Up Access Options: Time Zone and Access Combination Features

Access Options



Scenario I	<ul style="list-style-type: none">• User from TZG6 successfully scans the fingerprint. Reader will display "Multi-user Comb".• User from TZG7 places the finger and successfully verified. Reader will display "Verified" with voice greeting.
Scenario II	<ul style="list-style-type: none">• User from TZG8 places the finger and successfully verified. Reader will display "Verified" with voice greeting.
Scenario III	<ul style="list-style-type: none">• User from TZG9 scans the fingerprint. Reader will display "Invalid Group".

Any TZ Groups which are not configured in the Access Comb table will cause Access Control Reader to deny access. As a rule of thumb, all Time Zone Groups must have the corresponding entries in the Access Comb table.

Thiang Cheong Yew
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