

## Overview

PasswordManager Pro (PMP) deals with administrative passwords, most of which having unlimited privileges. Any compromise on security will expose the organizations to serious risks. Keeping this in mind, PMP has been designed to offer maximum security right from application installation to user authentication, data transmission, storage and entire work flow.

Apart from the existing security measures as detailed below, we keep on striving to make the application more secure continuously. This document provides details about the security specifications of the product in brief.

## Security at Various Levels

PMP protects the data at various levels, classified into the following seven categories:

- 1 Installation Master Key
- 2 Database Key
- 3 Authentication
- 4 Data Transmission
- 5 Data Storage
- 6 DataAccess

### Installation Master Key

PMP is secured using AES 128 encryption. AES is the strongest known encryption and has been approved by the US Government. During every installation, a unique encryption key is auto-generated using SHA1 hashing algorithm. The following options are provided to protect the encryption key:

- 1 Securely storing it outside PMP and instructing the application to read the key from the location that you specify. PMP will not store this key anywhere (OR)
- 2 Leaving PMP to store and manage the key securely by itself

### Database Key

- 1 Apart from the AES encryption, the PMP database is secured through a separate key, which is auto-generated and unique for every installation
- 2 The key for the database can be stored securely in the PMP itself
- 3 There is also option to store it at some other secure location accessible to the PMP server
- 4 The MySQL database accepts connections only from the host that it is running on and is not visible externally

### Authentication

PMP allows the users to choose one of the following two types of authentication:

- 1 **Local authentication** - PMP's own authentication mechanism. It employs SHA1 algorithm to generate password, which ensures that each PMP login password is unique and irreversibly secured.

- 2 Authentication by external identity stores -PMP can be integrated with external identity stores such as Active Directory/ LDAP and can use the authentication service provided by them. When the authentication by an external identity store is enabled, local authentication can be disabled.

## Data Transmission

- 1 All data transmission between the PMP user interface and server are encrypted and take place through HTTPS.
- 2 For remote password reset actions, there is option to transmit passwords using SSH.

## Data Storage

All sensitive data stored in PMP - passwords, files, digital keys, account names, IP addresses etc are encrypted using AES 128 encryption.

## Data Access

- 1 All data access in PMP are subjected to the granular access control mechanism. Password ownership and sharing practices are well-defined and users get access only to authorized passwords
- 2 In the case of Application-to-Application passwords, PMP exposes a web API and the applications connect and interact with the PMP through HTTPS. The application's identity is verified by forcing it to issue a valid SSL certificate, matching the details already provided to PMP corresponding to that application.
- 3 All access to passwords (who accessed what passwords and when) and all operations done by the users on any resource are captured in the audit trails ensuring accountability for all users and actions

## Work Flow

PMP ensures security all along the application work flow. The following are few examples:

- 1 Enforcement of standard password policies and practices
- 2 Monitoring failed login attempts
- 3 Termination of inactive user sessions
- 4 Automatic passwords resets
- 5 Setting password age
- 6 Real-time notifications on password access

## Disaster Recovery

The database backup generated by PMP follows all the above security aspects, which in turn makes disaster recovery secure.