Active Process Manager

Introduction

Active Process Manager (APM) is a complete software solution for managing the personalisation of smart cards and related processes in Windows™ environment. It can be configured to control all the hardware of a typical smart card personalisation unit. It is especially well suited for distributed systems, especially as a core of an RA point for PKI card issuance systems. It is also a very powerful building block in large Card Management Systems (CMS). As such, it can be used for smaller CMS applications. APM is easy to integrate to existing systems and services.

Personalising a PKI card is a very challenging task. A lot of information has to be collected from different sources using multiple protocols. This data has to be processed in a secure way and stored and/or printed on the card. New data is produced in the process, which must be updated to various destinations. Simultaneously, many peripherals have to be controlled to produce the card and possibly other material. All this must be carried out efficiently, with uncompromised security and maximised ease of use.

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Simply Secure

Implementing a bespoke PKI card issuance system has never been easier. The innovative software architecture of APM allows an easy integration to virtually all kinds of environments. It can easily be configured to implement the desired business logic and personalisation needs.

APM consists of a large selection of software modules that interface the system to the external world, such as hardware or services. Virtually any kind of functionality can be achieved by selecting the appropriate modules and linking them together, much like one would draw a block diagram. The modules, can each be configured in detail. They can produce or consume data, and this data can be shared with any number of other modules.

APM has a configurable and intuitive user interface. The processes are launched simply by pressing a button. It can also be configured to run continuously, without operator intervention.

Use cases

Personalising a dual interface PKI smart card with a card printer

A smart card PKI personalisation typically consists of the following tasks:
- Collection of personalisation data
  - Databases, external files and/or services
  - user input
  - photos, signatures on the spot
- Building certificate requests and acquiring certificates from a CA system
- Controlling the card printer
- Encoding and programming the smart card chip
  - creating PKCS#15 file structure
  - generating and importing cryptographic keys
  - storing certificates on the card
- Visual personalisation
  - Text, photos, other graphics
- Printing PIN / PUK envelopes and mailing forms
- Updating card order status and new data in the corporate database

Once configured, this complete personalisation process can be run by clicking a single button in the APM's main window. The operator enters a name or id of the card holder, after which a photographing interface appears. The operator takes a photo of the card holder and crops it. The supported cameras are fully remote controlled, so there is no need to touch the camera at all during the process.

The rest of the process is fully automatic. The card printer picks a card and takes it to the built-in card encoder. The smart card's file structure is initialised and the necessary key pairs are generated. A certificate request is built and sent to the CA system, which might reside in a remote server. The returned certificates are then stored on the card. If the card features an RFID chip, it is normally initialised at this stage. Finally, the card is printed with all the relevant graphical data.

Due to APM's great flexibility it is easy to modify the process. If you need another card type without photographs, you can alter the solution step so that the Camera Plug-in is not executed for specific card types. If you need to change the RFID from, say MIFARE to ICODE, just attach a different plug-in while the rest of the configuration remains the same. If you need to use Active Directory as a data source instead of an SQL database, just change the data source plug-in. If a carrier letter is needed, just put in another instance of Visual plug-in, and link it to a laser printer.

Invalidating returned or lost cards

APM is not restricted to encoding and printing cards. Solution steps can be created to manage the issued cards. In many cases no separate CMS is needed.

When an employee leaves the organisation, or a card is lost or stolen, the card has to be revoked. This might be necessary for each and every application that uses cards to authenticate users. You can easily add a step to your APM solution to do all that. If the card is available, you can have APM read the chip and find all the necessary information there. Otherwise you have to search the database and start by entering e. g. the card or employee number.

In this example, APM marks the card as not valid in all the relevant databases. Also, certificate revocation requests have to be built and sent to the CA systems. This is necessary to ensure that access to any systems will not be granted further, although the certificate expiration dates are not yet reached.

Notifying users of expiring cards

You can use APM to browse the card database or Active Directory, and look for cards that are expiring in the near future. APM can be configured to send e-mails to the users to ask them to come and renew their card.

APM's plug-in based architecture allows you to create many similar little configurations to help you to automate this kind of tasks needed in managing your cards in a large organisation.

Technical details

- More than 100 configurable plug-ins
- Active Directory integration support
- LDAP and SQL database connectivity
- Visual layout editor
- Certificate Management Protocol (CMP) support (e.g. Insta Certifier, RSA Keon, EJBCA)
- UniCERT CA ARM interface support
- Microsoft Windows Certificate Services support
- Support for various card printers including Datacard, Evolis, Fargo, and Zebra
- Supports many different smartcard and RFID card readers and encoding devices
- Document and PIN printing and mailing support
- Integrated camera with advanced picture cropping and picture manipulation

About Aventra Ltd

Aventra is a high-tech company specialised in information security products and services. We are especially focusing on Public Key Infrastructure technologies. Most of our products are developed in house.

Aventra offers a complete portfolio of card products ranging from simple plastic cards to high security smart cards and tokens. Our most recent product line features security solutions for mobile applications. We also provide complete services and systems for issuing and managing cards and secure tokens, including card printers and materials.