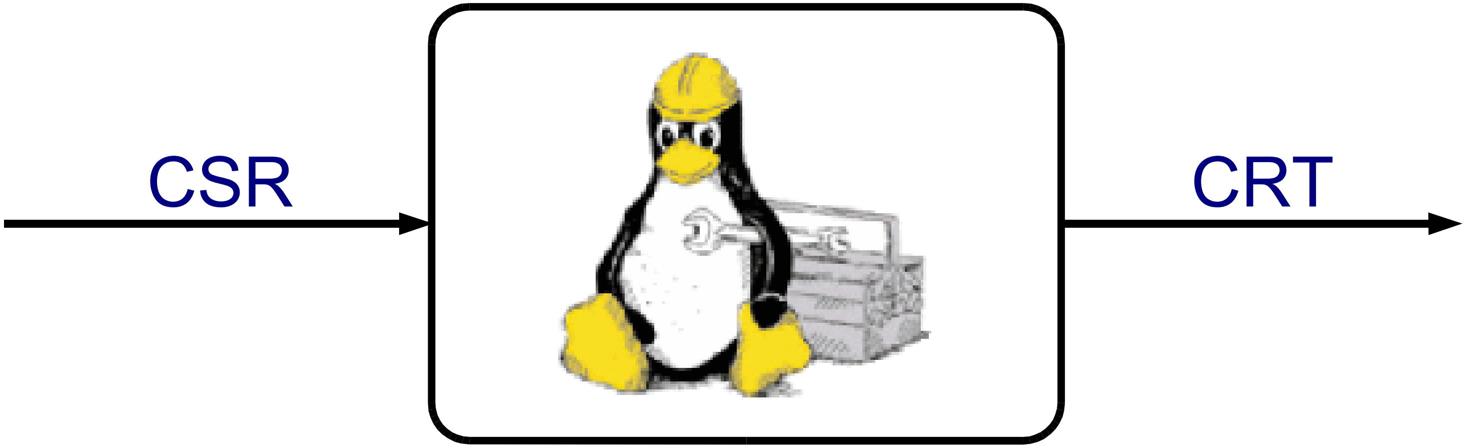
OpenCA Batch System



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Agenda

What is the Batch-System

Technical Overview

Default Workflow

Modify/Extend the Workflow

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What is the Batch-System

intended use

pre-requisites

risks

Technical Overview

Default Workflow

Modify/Extend the Workflow

intended use

- initial action must be triggered by operator
- no supervision by operator

- automated generation of CSRs
- automated signing of CSRs
- automated generation of CRRs
- automated revokation
- automated CRL creation NOT supported

pre-requisites

- certificate data
  - pre-processed
  - verified
  - ensured integrity
- appropriate workflow exists

risk

possible

100% integrity loss

if something goes wrong !

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What is the Batch-System

Technical Overview

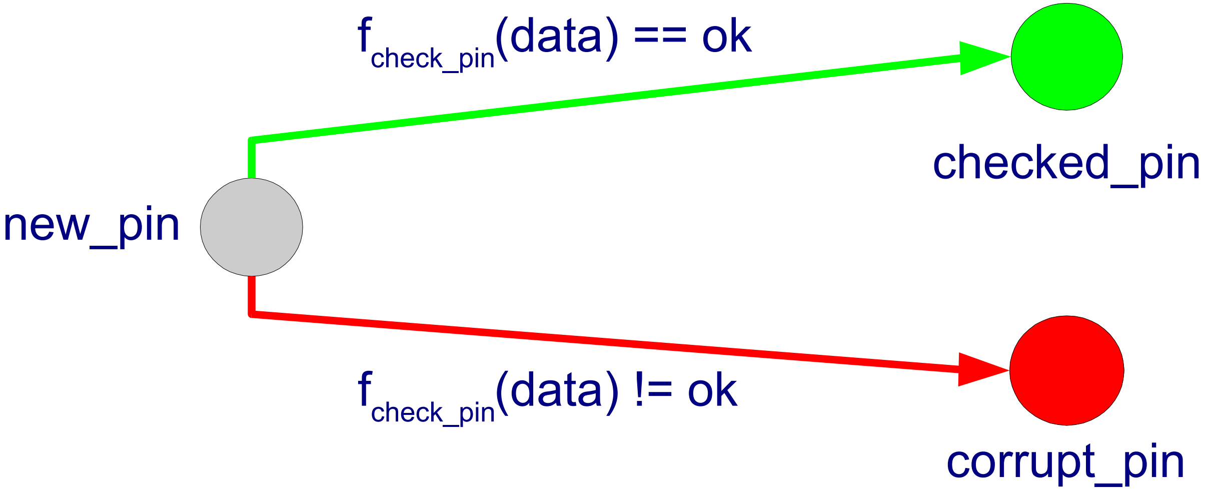
- statemachine concept
- data storage and import
- process workflow
- process lifetime / batch operation modes
- batch function

Default Workflow

Modify/Extend the Workflow

statemachine concept

- defined states
- conditional transitions between states
- current state indicates what function to call next



function processes data and sets new state

data storage

- batch process / state machine related data on filesystem (var/bp/users/<userid>/<pid>)
- own directory for each process
- file / subdir structure within process directory to store imported and temporary data

- one common directory for data export (var/bp/users/dataexchange)

data import

process control

```
USER jane_doe
PROCESS hr123
set_state new_process
```

user data

```
ROLE User
SUBJECT CN=Jane Doe, O=OpenCA, C=IT
importedPIN@private
-----BEGIN MYPIN-----
-----BEGIN PKCS7-----
SmXGmDTsQXiRmOvuWWRIgVz3ZjVGRK7fo=
-----END PKCS7-----
-----END MYPIN-----
```

/j/a/n/e/_/d/o/e/workflows/hr123/

state.txt	statemachine control
data/ROLE	„USER“
data/SUBJECT	„CN=Jane Doe, O=OpenCA, C=IT“
private/importedPIN	„-----BEGIN PKCS7----- SmXGmDTsQXiRmO...... -----END PKCS7-----“

process workflow

- Look for pending workflows (var/bp/users.txt)
- for all pending workflows:
  - Determine current state (<processdir>/state.txt)
  - Call assigned function
  - new state is written by the function
- above step is repeated as many times as selected via the frontend
- planned: repeat until all workflows reach a stable (or defined) state

process lifetime / operation modes

action-based batch mode

- process equal to one workflow (issue cert)
- recommended in mixed (batch/web) environments
- process is deleted after first final state is reached
- new action on same key spawns new process

key-based batch mode

- process equal to key lifecycle (renewal, revocation)
- recommended only in batch-only environments
- external app must handle „key to process“ binding
-

batch function

- transition functions are stored in files
- called within the CA framework
- environment with pointers to
  - global configuration
  - process working directory
  - statemachine control
  - cryptographic tokens
  - log devices
- direct access to the operating system (via perl)

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What is the Batch-System

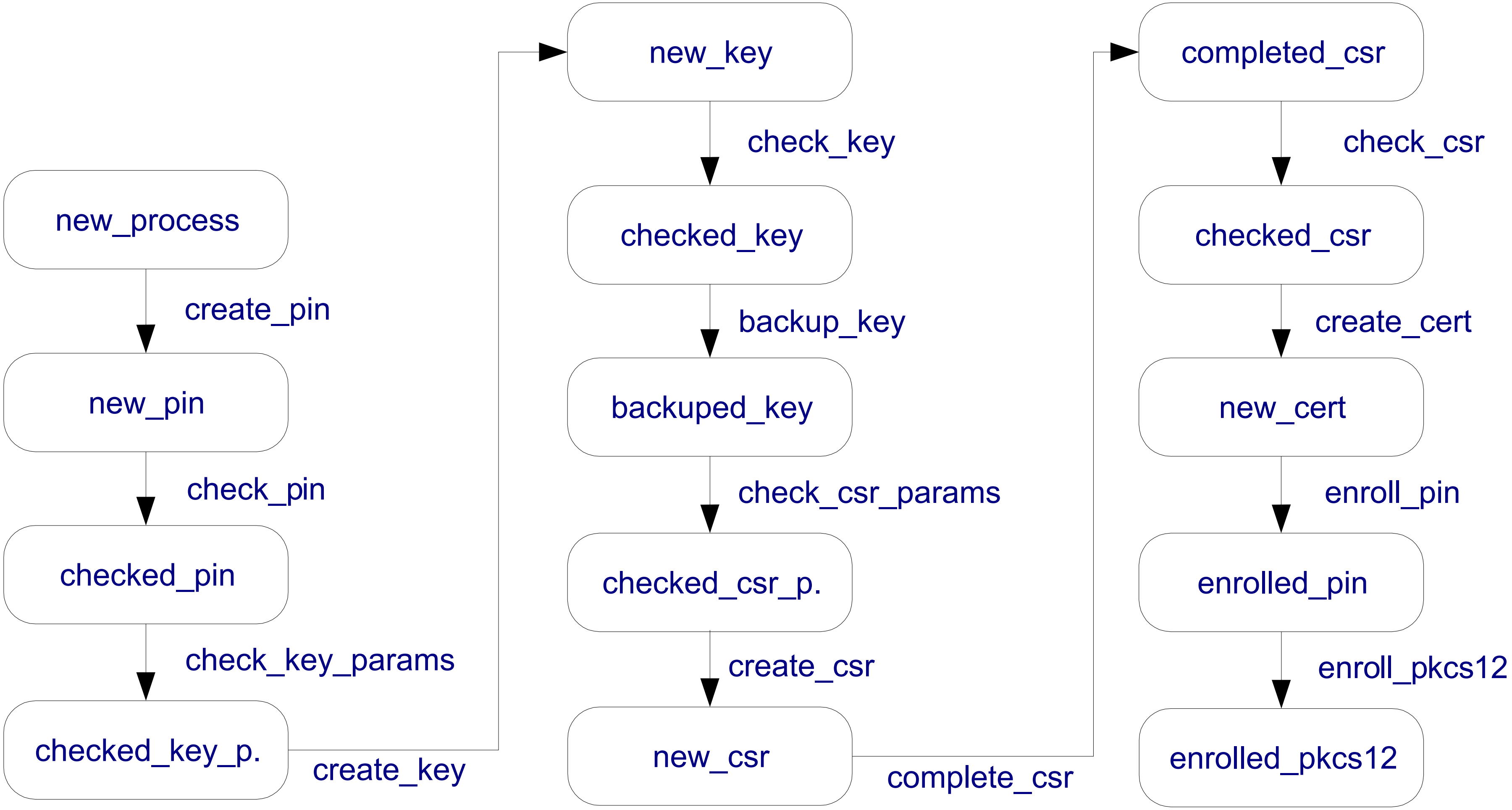
Technical Overview

Default Workflow

- States
- Functions

Modify/Extend the Workflow

Transition Graph



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What is the Batch-System

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Default Workflow

Modify/Extend the Workflow

- create a new function
- bugs, issues, upcoming changes

create a batch function

- create a new file lib/bp/myfunction.sub
- import pointers to OpenCA APIs
- implement your functionality
- use the statemachine-object to set appropriate states
- add your new states to etc/bp/states.txt

- add the function to etc/bp/functions.txt
- create etc/bp/functions/myfunction.txt and put the possible starting states there

bugs, issues, upcoming changes

- example batch functions don't use „error-states“
- revocation not implemented
- statemachine accepts multiple states for one process requires resetting the state after processing within the functions (will be fixed in 0.9.3)
- data storage moves (partially) to database
- no standard-behaviour for handling enrolled data

protect the environment !