NetGuardians

RiskTech 100 2019

Gartner 2015 Cool Vendor

Controls Framework

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August 2019

NG | Academy

swiss made software

Summary

- What is a control?
- Control Framework view
- Define new control
- Simple vs. Advanced controls
- Advanced controls in Python
- Testing controls
- Controls administration

What is a control?

- A control is aiming at modeling a specific situation in regards to
  - Specific rules in PBI controls
  - Important event characteristics in case of Profiling
- First focus on PBI (Pattern Based Intelligence)
- Profiling part of another presentation

Notions of Risk Model

- Extension of a control
- Aim at modeling Risks and not specific situations
- One risk model covers several use cases
  - Based on customer/employee behavior

Control Framework

- Objectives of control framework are:
  - Group different information in a single document
  - Scheduling of controls for periodic delivery and alerting purpose
  - Controls are grouped into Solutions

Solutions

Digital Banking Fraud

Solution installed

CONTROLS
Et04 - Ebanking Transactions

Total entries: 1

Enterprise Fraud

Solution installed

CONTROLS
Nc03 - New Customer
Pr02 - Unusual Locations
Rd02 - Risky Destinations
Spt06 - Small Profiles Transaction
Ua05 - Unusual Amounts
Ut01 - SPC101 - Unusual Transactions
Ut01 - SPC103 - Unusual Transactions
Ut01 - SPC202 - COV - Unusual Transactions
Ut01 - SPS103 - Unusual Transactions

Total entries: 18

Internal Fraud

Solution installed

CONTROLS
Am01 - SMS Profile Creations-Modification...
Am01 - Windows Group Changes - mswi
Am02 - Statistics on User Rights Creations...
Am02 - Windows Group Modifications - mswi
Am03 - Details on User Rights Creations a...
Am03 - Details on Windows Computer Acc...
Am04 - Details on Windows User Rights Cr...
Am04 - Reversals on User Access Rights - ...
Am05 - Details on Windows User Right Del...

Total entries: 87

Type of controls

- Type of controls
  - Scheduled
    - Executed periodically
    - Result exported to predefined channels
  - On-demand
    - Execute control once from UI
    - Possible to export results of execution

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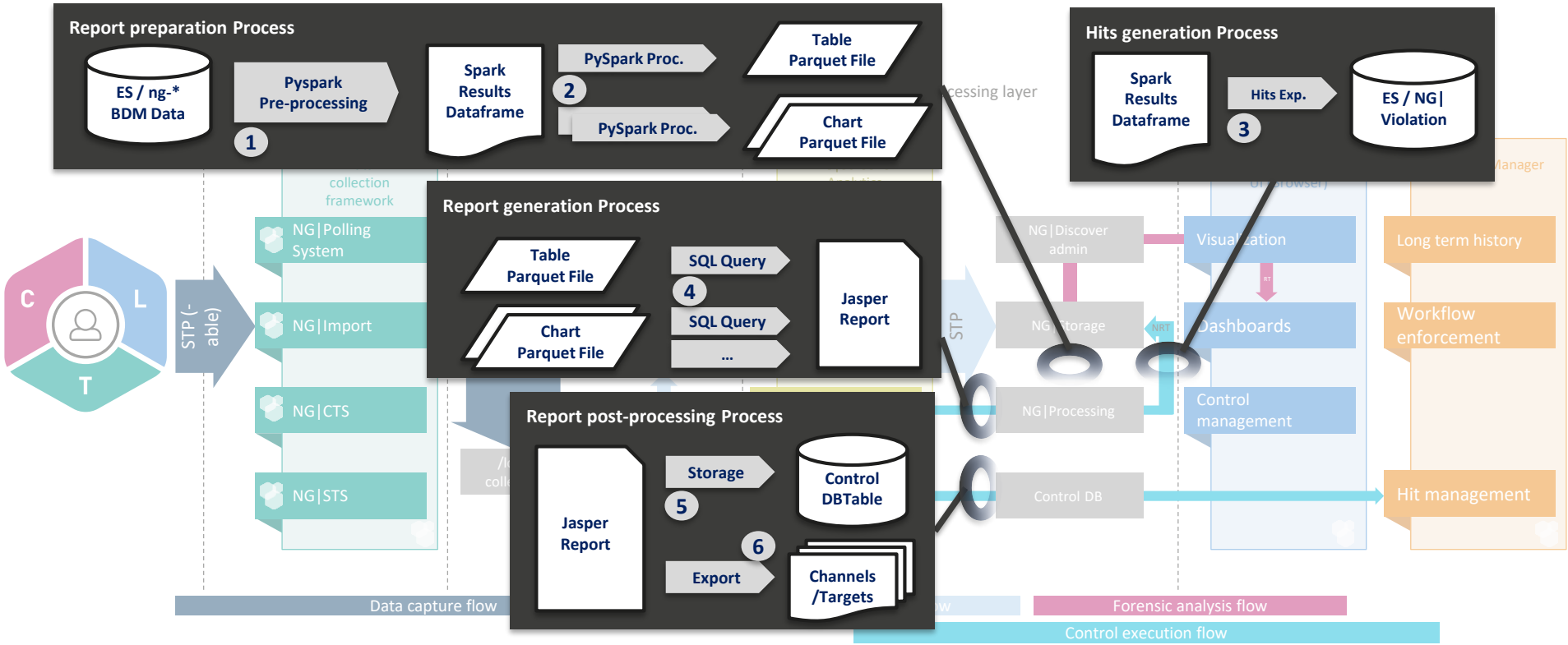
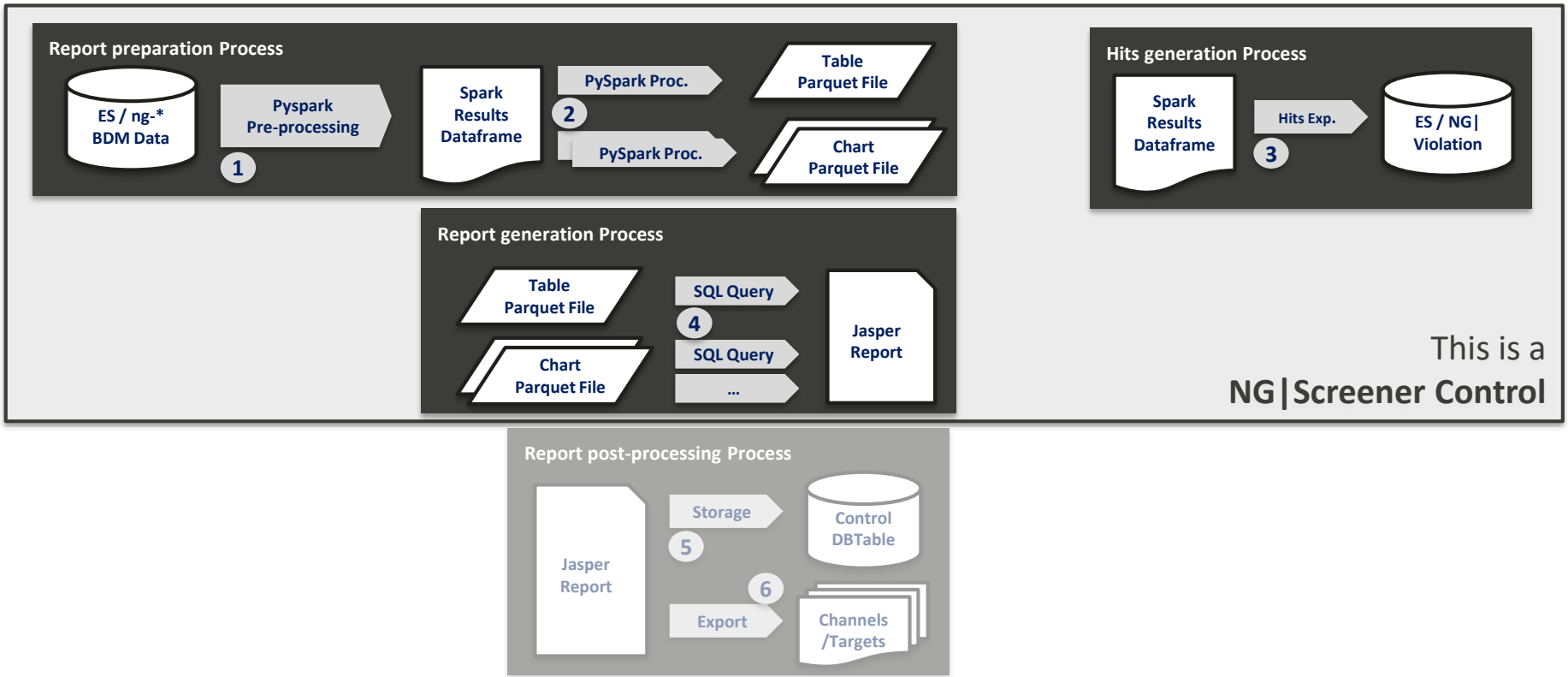
What is technically a control?

NG|Screener Control



NG|Screener Control



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Control Framework view

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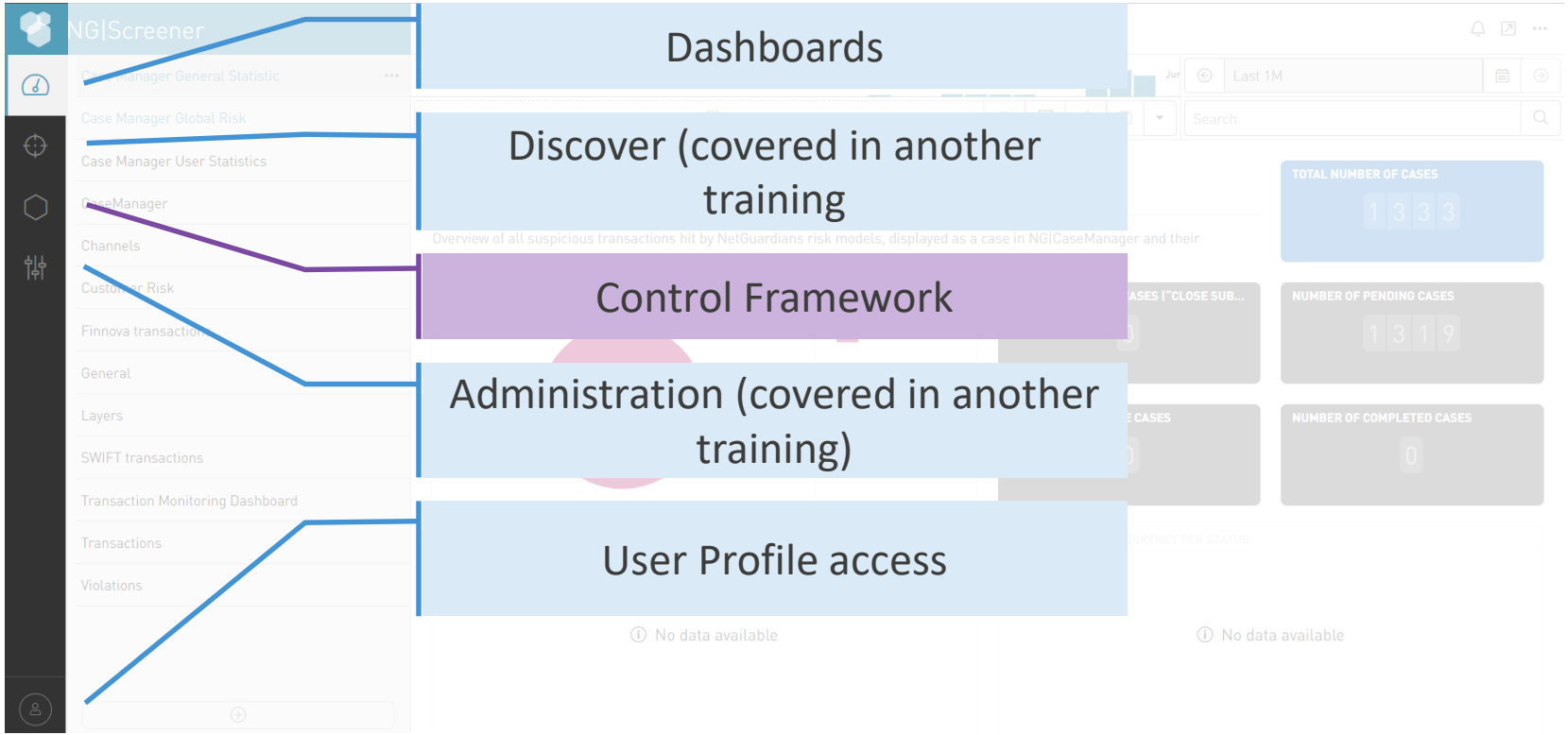
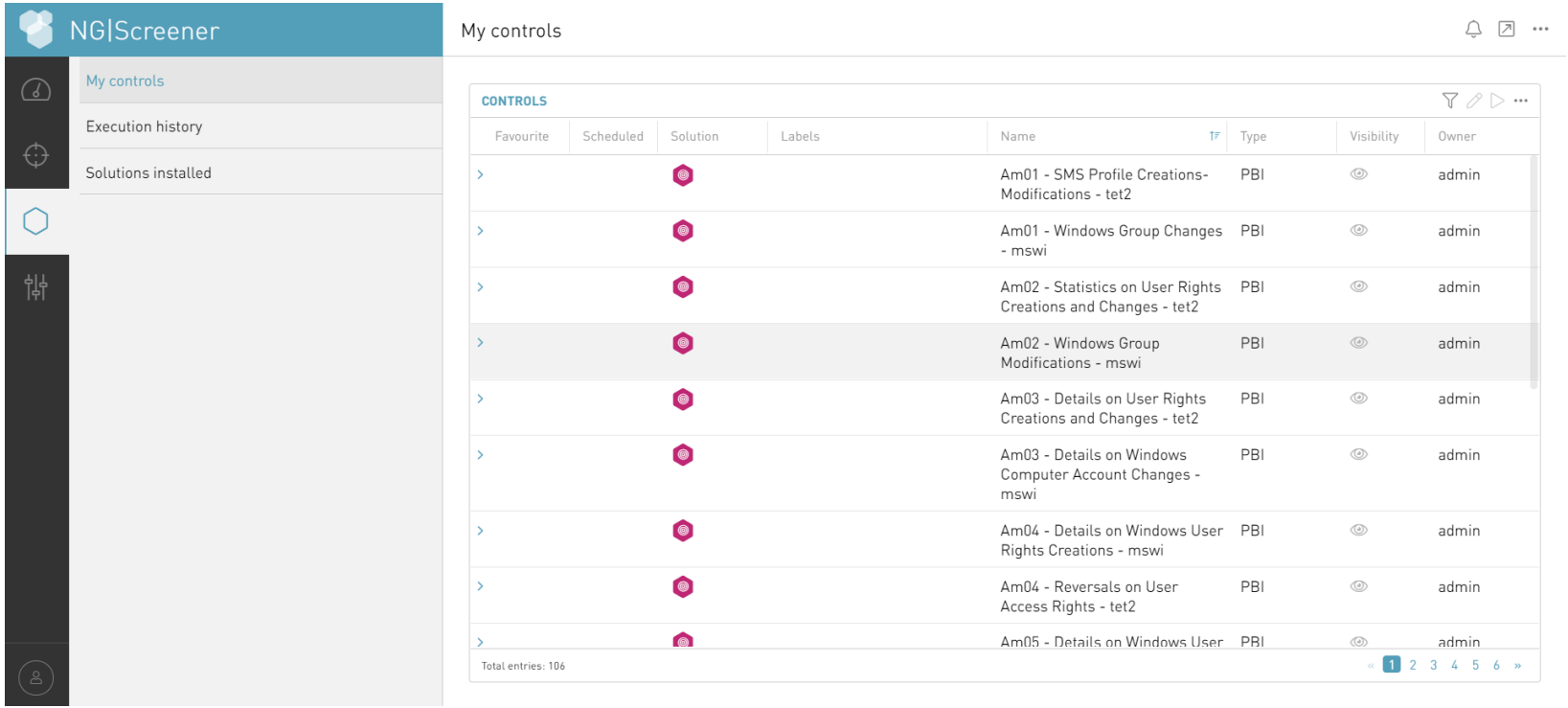
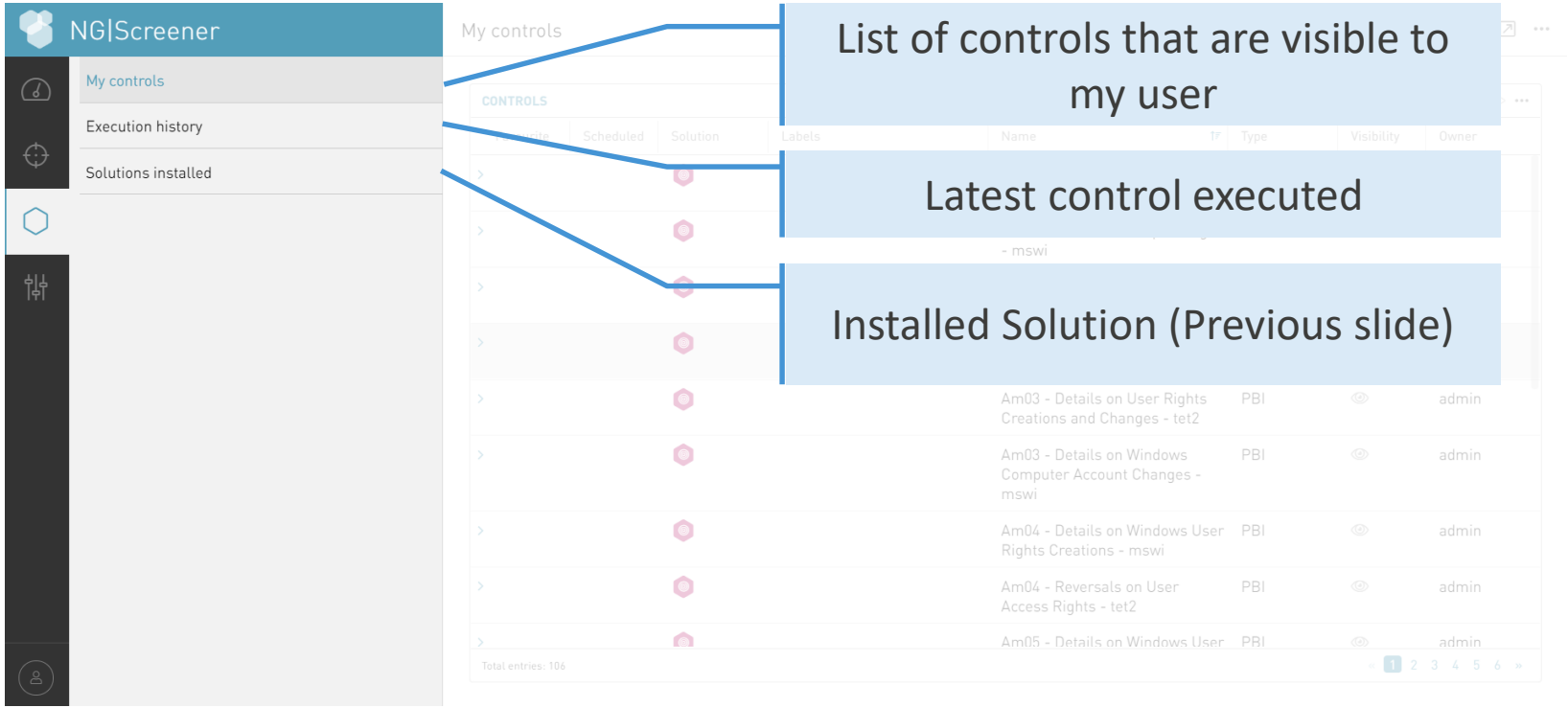
Access Controls Framework



Control Framework view



Control Framework view



My Controls

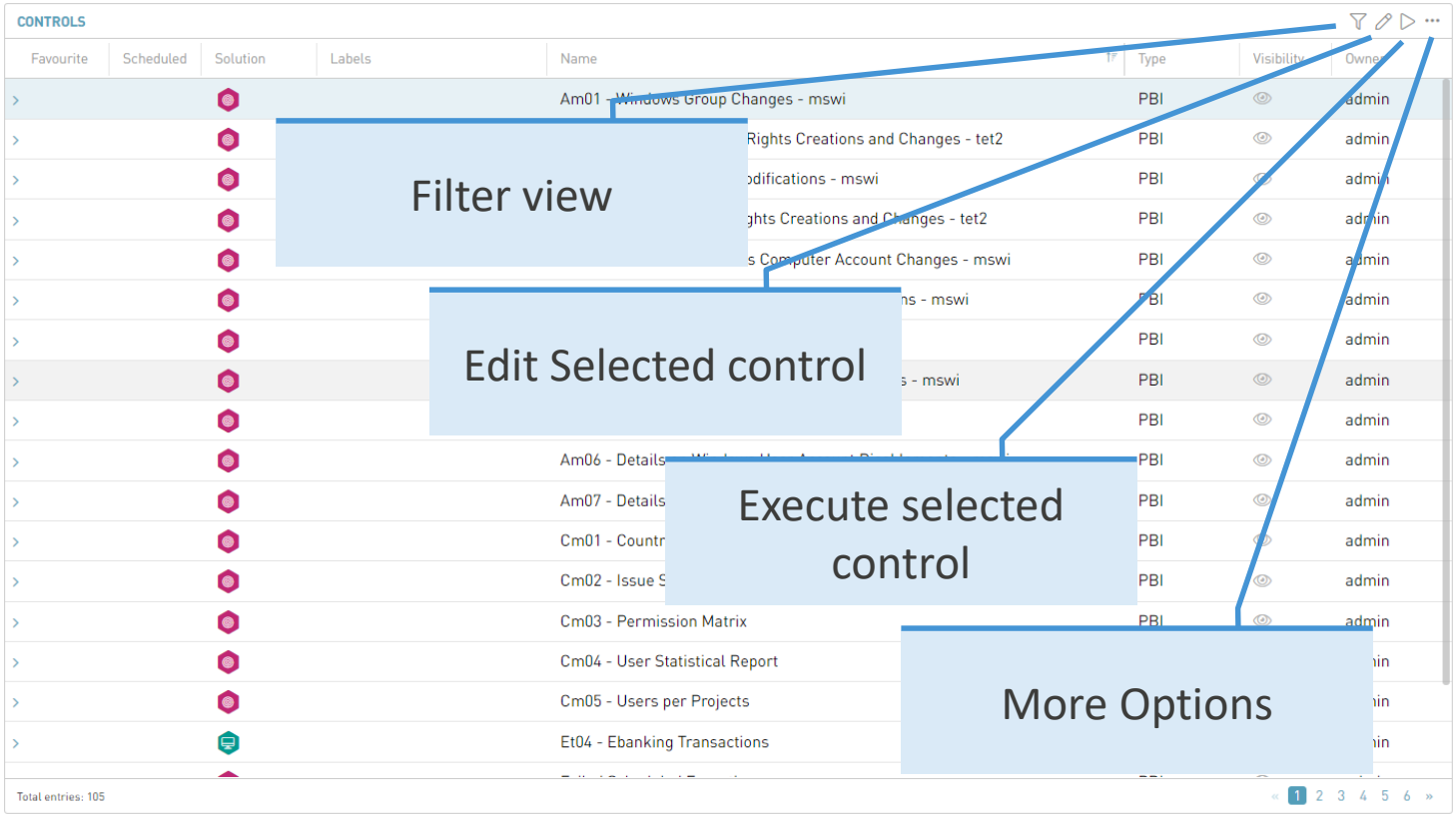
CONTROLS

Favourite	Scheduled	Solution	Labels	Name	Type	Visibility	Owner
				Am01 - Windows Group Changes - mswi	PBI		admin
				Am02 - Statistics on User Rights Creations and Changes - tet2	PBI		admin
				Am02 - Windows Group Modifications - mswi	PBI		admin
				Am03 - Details on User Rights Creations and Changes - tet2	PBI		admin
				Am03 - Details on Windows Computer Account Changes - mswi	PBI		admin
				Am04 - Details on Windows User Rights Creations - mswi	PBI		admin
				Am04 - Reversals on User Access Rights - tet2	PBI		admin
				Am05 - Details on Windows User Right Deletions - mswi	PBI		admin
				Am05 - Reversals on Group Access Rights - tet2	PBI		admin
				Am06 - Details on Windows User Account Disablements - mswi	PBI		admin
				Am07 - Details on Windows User Account Enablements - mswi	PBI		admin
				Cm01 - Country Statistical Report	PBI		admin
				Cm02 - Issue Statistical Report	PBI		admin
				Cm03 - Permission Matrix	PBI		admin
				Cm04 - User Statistical Report	PBI		admin
				Cm05 - Users per Projects	PBI		admin
				Et04 - Ebanking Transactions	Profiling		admin

Total entries: 105

« 1 2 3 4 5 6 »

My Controls



My Controls

CONTROLS

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				Am01 - Windows Group Changes - mswi	PBI		admin
				Am02 - Statistics on User Rights Creations and Changes - tet2	PBI		admin
				Am02 - Windows Group Modifications - mswi	PBI		admin
				Am03 - Details on User Rights Creations and Changes - tet2	PBI		admin
				Am03 - Details on Windows Computer Account Changes - mswi	PBI		admin
				Am04 - Details on Windows User Rights Creations - mswi	PBI		admin
				Am04 - Reversals on User Access Rights - tet2	PBI		admin
				Am05 - Details on Windows User Right Deletions - mswi	PBI		admin
				Am05 - Reversals on Group Access Rights - tet2	PBI		admin
				Am06 - Details on Windows User Account Disablements - mswi	PBI		admin
				Am07 - Details on Windows User Account Enablements - mswi	PBI		admin
				Cm01 - Country Statistical Report	PBI		admin
				Cm02 - Issue Statistical Report	PBI		admin
				Cm03 - Permission Matrix	PBI		admin
				Cm04 - User Statistical Report			
				Cm05 - Users per Projects			
				Et04 - Ebanking Transactions			

Total entries: 105

« 1 2 3 4 5

More Options

- New control
- Duplicate control
- Delete control
- Toggle favourite
- Edit labels
- Show description

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Define new Control

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Define new control

CONTROLS

Favourite	Scheduled	Solution	Labels	Name	Type	Visibility	Owner
				Am01 - Windows Group Changes - mswi	PBI		admin
				Am02 - Statistics on User Rights Creations and Changes - tet2	PBI		admin
				Am02 - Windows Group Modifications - mswi	PBI		admin
				Am03 - Details on User Rights Creations and Changes - tet2	PBI		
				Am03 - Details on Windows Computer Account Changes - mswi	PBI		
				Am04 - Details on Windows User Rights Creations - mswi	PBI		
				Am04 - Reversals on User Access Rights - tet2	PBI		
				An	PBI		
				An	PBI		
				An	PBI		
				An	PBI		
				Cr	PBI		
				Cr	PBI		
				Cm03 - Permission Matrix	PBI		
				Cm04 - User Statistical Report	PBI		
				Cm05 - Users per Projects	PBI		admin
				Et04 - Ebanking Transactions	Profiling		admin

Total entries: 105

« 1 2 3 4 5 6 »

Create new control from scratch (or option to duplicate from existing)

New control

Duplicate control

Delete control

Toggle favourite

Edit labels

Show description

Modify control

Control edition

General | Report | Dashboard | Scheduling | Description

Name (required)
Am01 - SMS Profile Creations-Modifications - tet2

Type
Profiling PBI

Owner (required)
[USER] admin

Public

Violation

Solution (required)
Internal Fraud

Labels

Services (required)
temenosT24Protocol@*

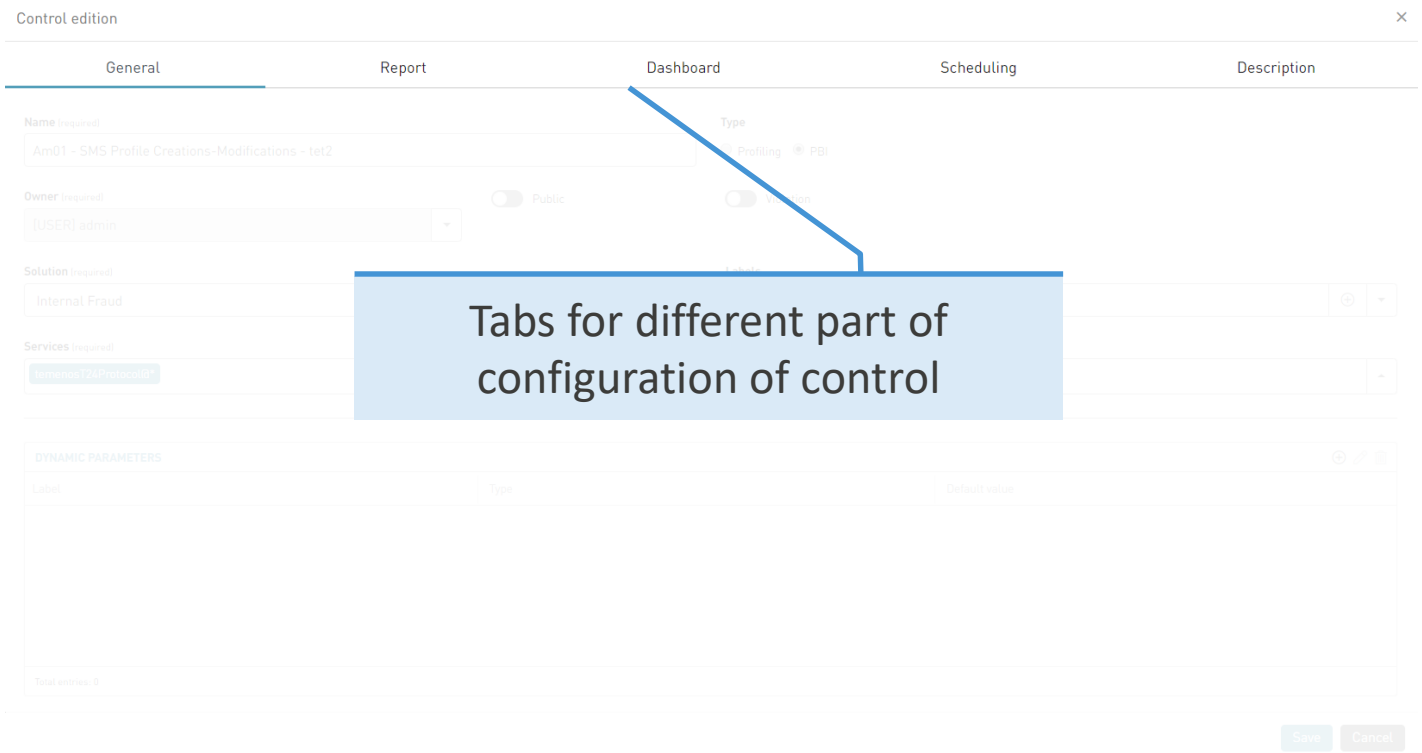
DYNAMIC PARAMETERS

Label	Type	Default value

Total entries: 0

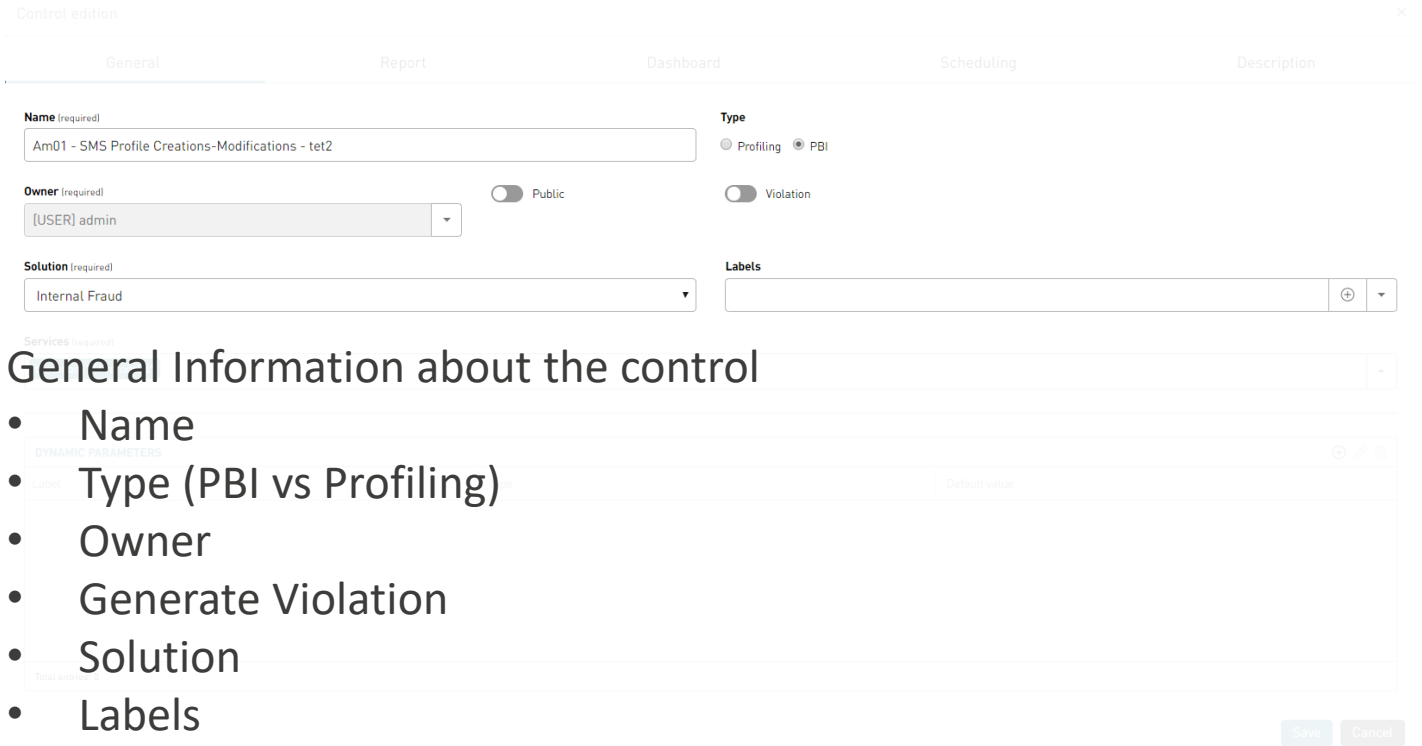
Save Cancel

Modify control



Tabs for different part of configuration of control

Modify control - General



General Information about the control

- Name
- Type (PBI vs Profiling)
- Owner
- Generate Violation
- Solution
- Labels

Modify control - General

Select Data source(s) on which to apply control

Modify control - General

Control edition

General | Report | Dashboard | Scheduling | Description

Name (required)

Am01 - SMS Profile Creations-Modifications - tel2

Type

Profiling | PBI

Owner (required)

[USER] admin

Public

Violation

Solution (required)

Internal Fraud

Labels

Services (required)

telnetnos1 24 Protocol8

Parameters to be provided at execution time

DYNAMIC PARAMETERS

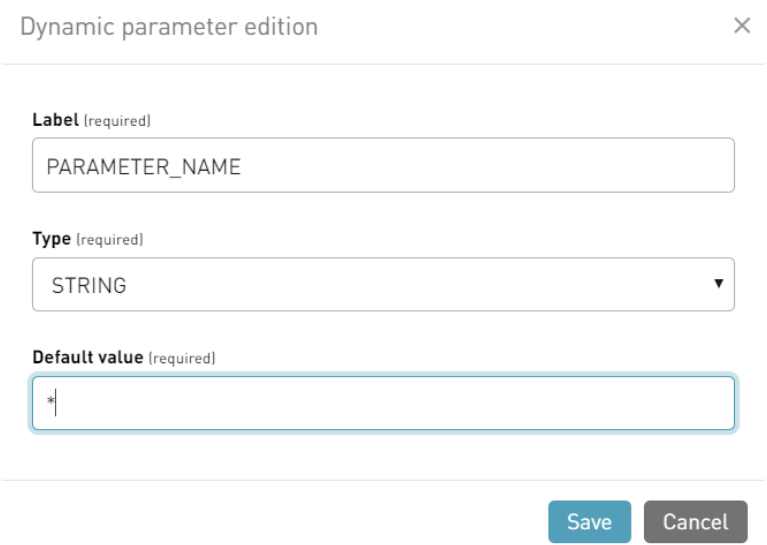
Label	Type	Default value

Total entries: 0

Save | Cancel

Dynamic Parameters

- Parameters to be provided at execution time
  - Ex: Listing of all transaction above a million CHF for a specific customer
- Defined in control filter with the following syntax
  - `${PARAMETER_NAME}`
- Example filter
  - `transaction_currency:${CURRENCY} AND transaction_amount:>10000000`
  - Where CURRENCY is the dynamic parameter



Modify control – Report (Simple)

Control edition

General | Report | Dashboard | Scheduling | Description

Selection

Advanced

Report type

Status Export

Timeline

Chart

None Bar chart Pie chart

Table

Configuration

Alert report

Not available value

N/A

Filter

business_application:USER.SMS.GRO

Preview

Am01 - SMS Profile Creations-Modifications - tet2

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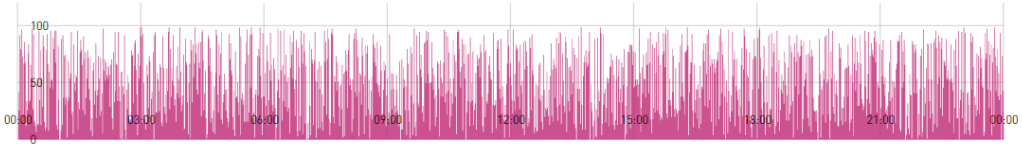
IT Risk Metrics – COBIT Access to Programs and Data / User Access Management

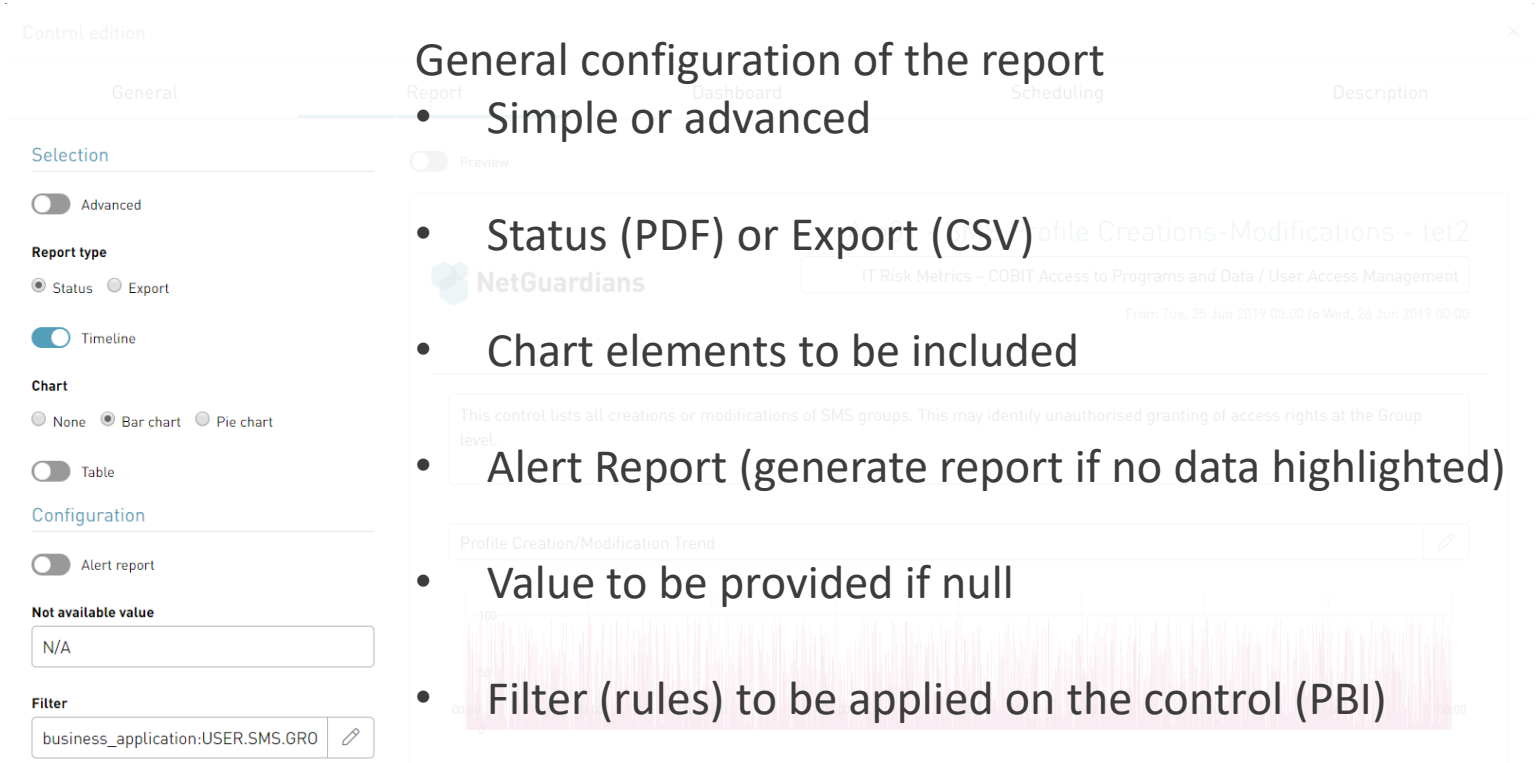
From Tue, 25 Jun 2019 00:00 to Wed, 26 Jun 2019 00:00

This control lists all creations or modifications of SMS groups. This may identify unauthorised granting of access rights at the Group level.

Profile Creation/Modification Trend



Modify control – Report (Simple)

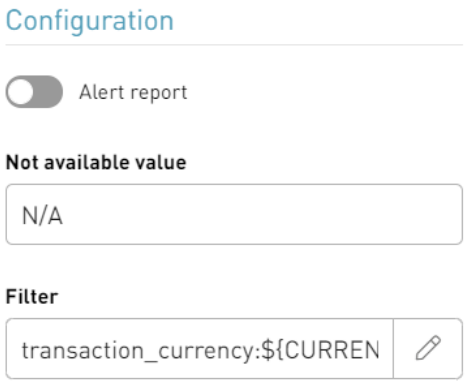


General configuration of the report

- Simple or advanced
- Status (PDF) or Export (CSV)
- Chart elements to be included
- Alert Report (generate report if no data highlighted)
- Value to be provided if null
- Filter (rules) to be applied on the control (PBI)

Simple Control Filters

- Adapting filter
  - Make use of **Elastic Search's query string syntax:**
  - Examples:
    - Value containted → status:active
    - Wildcard → status:act*
    - OR → title:(quick OR brown)
    - Exact phrase → author:"John Smith"
    - Non null-value → _exists_:title
    - Ranges → count:[1 TO 5]
  - Documentation:
    https://www.elastic.co/guide/en/elasticsearch/reference/current/query-dsl-query-string-query.html#query-string-syntax

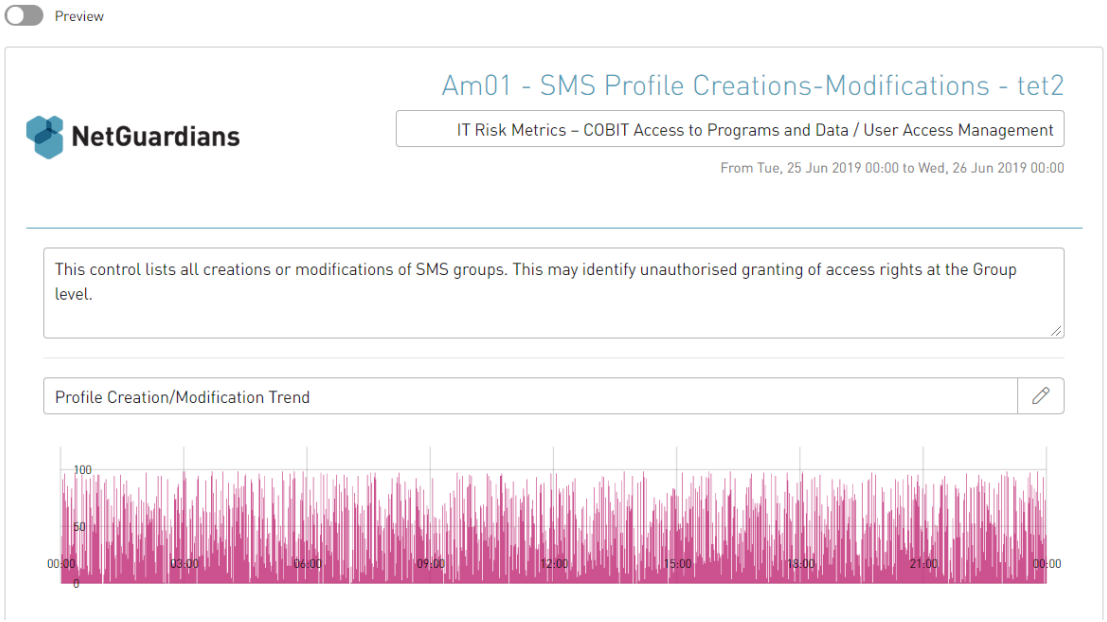


- Alert Report
  - Yes → Control output sent to target only if filter matches
  - No → Control output sent to target event if empty

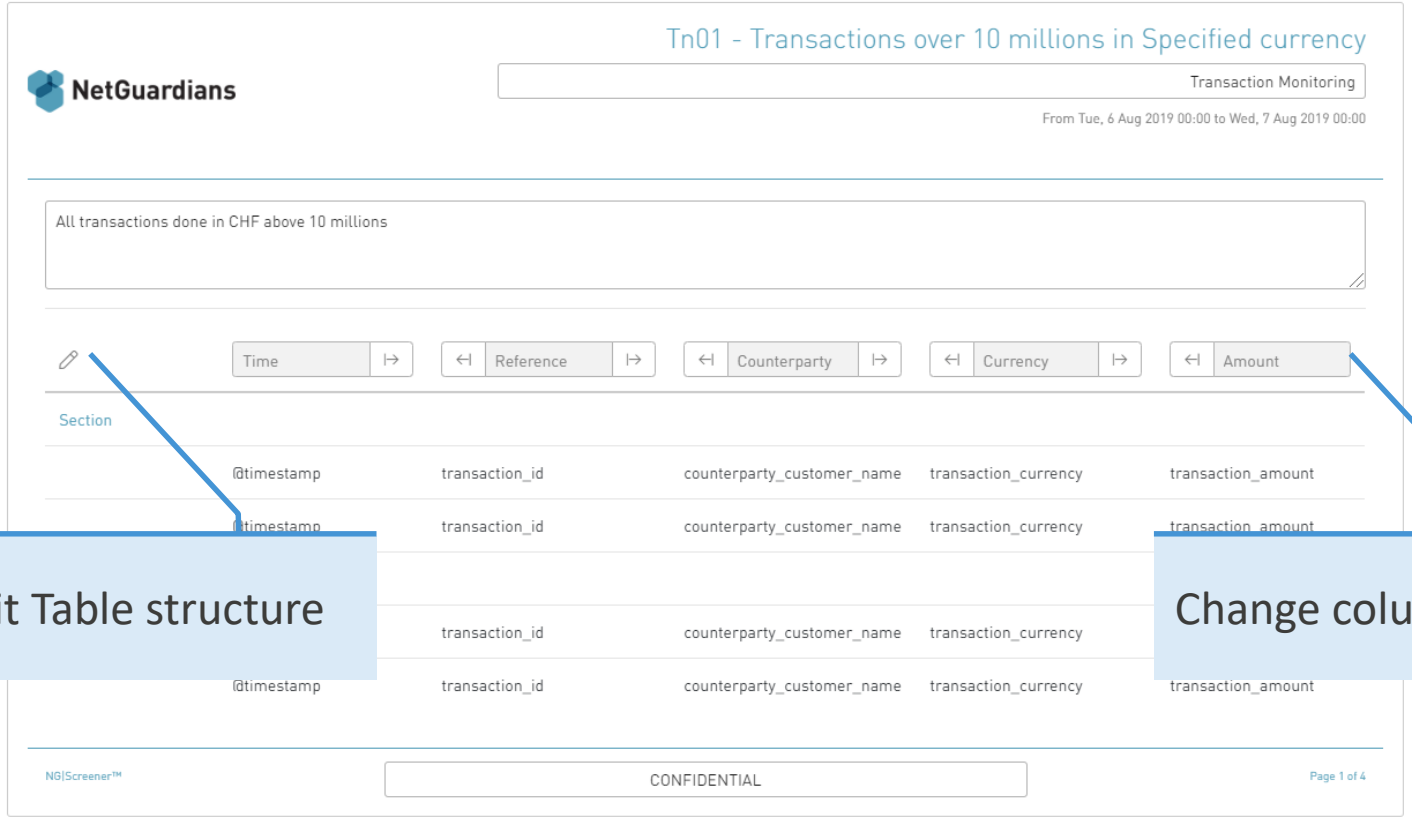
Modify control – Report (Simple)

Presentation and component configuration

- Description and subtitle
- Chart component configuration



Modify Table format

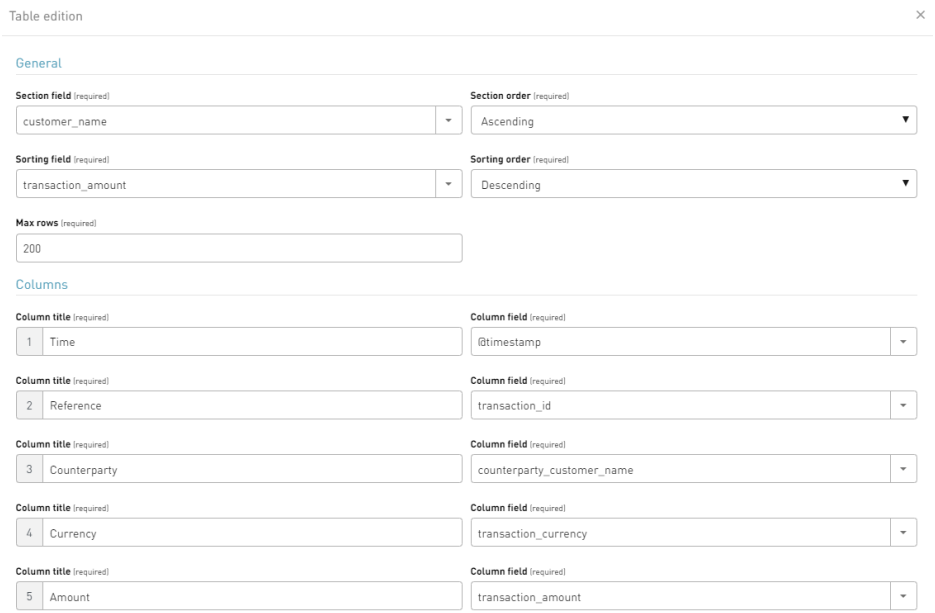


Edit Table structure

Change columns order

Modify Control - Table Edition

- Modify Column name as well as field displayed
- Other parameters
  - Section field
  - Sorting options
  - Maximum number of rows
    - 0 for all rows
- Configuration specific when other kind of object (charts, timelines, etc…)



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Simple VS Advanced controls
Basic concepts

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Fundamental definitions

A **simple control** is

- A control for which no python custom code has to be supplied
- A control for which configuration makes it all

An **advanced control** is

- A control for which python custom code has to be supplied
- A control for which plain configuration does not suffice

Examples

What can be done with simple controls?

Filter input data?

- Yes, as long as the filter is a simple one, i.e. as long as the element to be filtered contains all the necessary information for the filtering

```
transaction_amount > 100’000
```

- Not possible any more if filter needs external data or data computed with more than just the element currently under scope

```
transaction_amount > 2 * average of
   transaction_amount over last month
```

What can be done with simple controls?

Show derived attributes in report?

- Not though the control itself (only a «select» kind of query)
- **But** the derived attribute can be added to the incoming event in the normalization phase (scripted fields), so that the controls see it as any other plain attribute

What can be done with simple controls?

Add fields to the report/violation?

- Yes, as long as the fields to add are already present in the data seen by the control (may be added during normalization phase, of course)
- The number of columns in the report/violation is only limited by the number of fields in the input data

What can be done with simple controls?

Combine several data sources?

- Yes, if the datasources actually belong to the same logical service
- No if the services are different and have to be joined

Example in the case of protocol and transaction events joined together to associate more technical information to the financial transaction

Note that this can also be mitigated by using a *join script* (external processing) which result is merged as one service

What can be done with simple controls?

Add a basic rule inside a profiling control?

- Depends on the rule and on what is expected of the solution as a whole...
- If rule is «don’t score little amounts»
  - Can be achieved with a filter
  - **but** cannot be done in case transactions have to be explicitely **granted**/blocked (Swisscom example)
- If rule is «always raise a hit if amount is big enough»
  - No (separate PBI control, actually)
- If rule is «never raise a hit if the profile size is too low, resp. too high»
  - Yes, using the configuration of the «profile size limitation»

What can be done with simple controls?

Define whitelisting/blacklisting in profiling controls?

- Yes, if the trigger is a given attribute having a given value
- Triggering attribute/value can be set on each profiling variable separately

What can be done with simple controls?

Define hybrid controls?

- Hybrid control? What's that?
  - Mix of profiling control with external influence
  - Example:
    - Once a day a plain PBI control (probably advanced) computes a kind of score for bank employees → pushed to ngv
    - Then a process regularly exports those violations to CSV ...
    - ... and this CSV is loaded into some reference data ...
    - ... which can then be used for transaction enrichment
    - The new «*_score» attribute can be integrated as any other (not really profile-related, i.e. *artificial*) variable in the profiling scoring mechanism

What can be done with simple controls?

Define hybrid controls?

- Yes (at least for the profiling control part)
- Probably not for the artificial score computation part

And when not?

- Simple controls can be transformed to **advanced** ones
- Functionaly equivalent skeleton generated on transformation
- Skeleton can be modified manually afterwards

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Advanced controls

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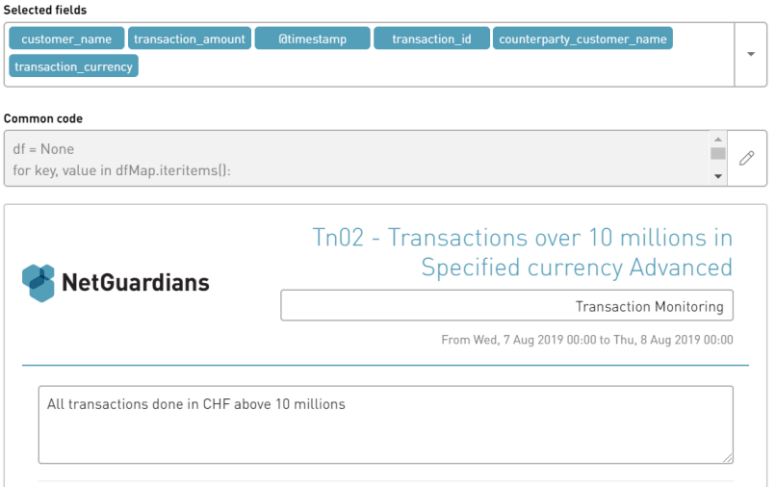
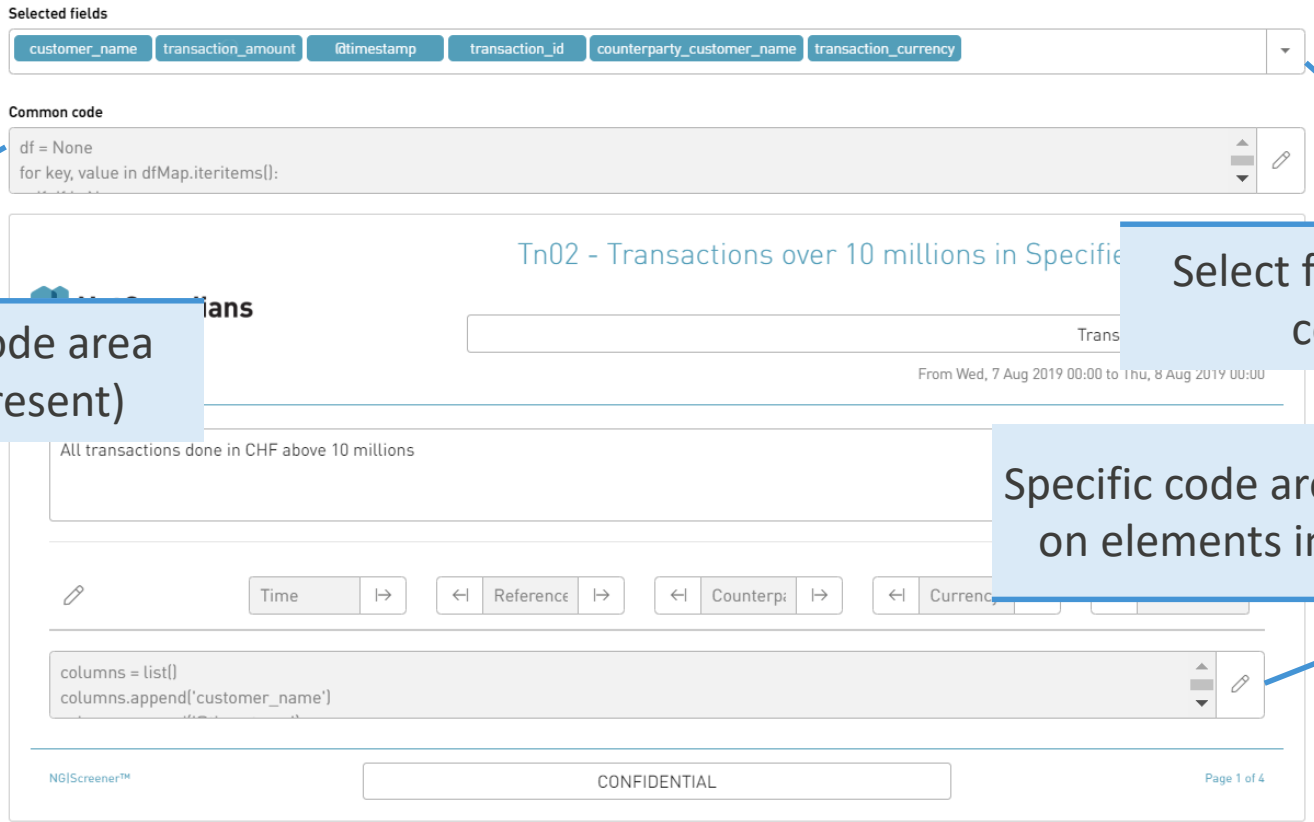
Advanced controls

- Overcome limitation of standard templates
  - Usage of multiple data sources
  - Dealing with specific algorithms
- First select fields needed for the control
  - Both for display and logic
- Then python code to define the business logic of the control
  - One common code
  - One code per each element in the report (Table, piechart, etc…)



Advanced controls



Common code area (Always present)

Select fields for the control

Specific code area (depending on elements in the report)

Advanced controls

- Selected fields
  - List of fields from the input data frame (business model) that will be presented in the data frames (matrices)
  - Search available through fields
  - Missing values in the source data will be transcribed into «*null*» values in the data frames

Selected fields

customer_name | transaction_amount | @timestamp | transaction_id | counterparty_customer_name | transaction_currency

Advanced controls

- Python text area
  - Pencil to edit python code
  - Each area is a mapping for a given python function
  - Common code area & other graphical element
  - Parameter – provided cannot be modified
    - Prototype of the function provided
  - **Function's body** <u>must be modified</u>
    - Skeleton provided as sample

Advanced controls

- **Common code function**
  - Always present regardless the chosen report type

  - **Input** parameter: ‘**dfMap**’
    - Dictionary of data frames indexed by service name
      - Source data coming from the corresponding service
    - All data frames have the same structure
      - Using configured selected fields
  - **Ouput**:
    - Dict of data frames or Single data frame (key structure is free)
    - Used as input parameter for the other custom functions

Advanced controls

- Common code small example

def proceed_common_code(dfMap):

```
df = None
for key, value in dfMap.iteritems():
    if df is None:
        df = value
    else:
        df = df.union(value)

df = df.filter(col('transaction_currency') == '${CURRENCY}').filter(col('transaction_amount') > 10000000)

return df
```

Advanced Template Configuration

- **Other functions**
  - Dependent of the chosen report type (*table, timeline, bar/pie chart*)
  - **Input** parameter: '**df**'
    - Whatever was returned by the common **code function**
  - **Table** Ouput :
    - One data frame with the table's content
    - First column is used for the section, others for the table itself

Advanced Template Configuration

- Table Output example:

def proceed_table_code(df):

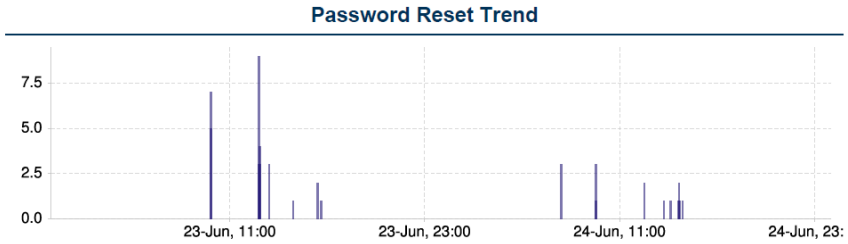
```
columns = list()
columns.append('customer_name')
columns.append('@timestamp')
columns.append('transaction_id')
columns.append('counterparty_customer_name')
columns.append('transaction_currency')
columns.append('transaction_amount')

df = df.select([col(xx) for xx in columns])
sortColumns = list()
sortC
sortC
sortC
sortC
sortC
df =

retur
```

6928922

Time	Reference	Counterparty	Currency	Amount
2019-07-01 09:37:53	643188857869586	(anonymized); rue Bugnon; 5324 Menthonnex am Rhein	CHF	36725296.00
2019-06-30 16:56:23	103038817597692	(anonymized); rue Bugnon; 5324 Menthonnex am Rhein	CHF	29245180.00
2019-06-30 10:21:53	815125430676658	(anonymized); rue Bugnon; 5324 Menthonnex am Rhein	CHF	24855396.00
2019-06-30 15:57:44	186126364406933	(anonymized); rue Bugnon; 5324 Menthonnex am Rhein	CHF	12513099.00
2019-06-30 17:37:13	221436978786552	(anonymized); rue Bugnon; 5324 Menthonnex am Rhein	CHF	10324022.00

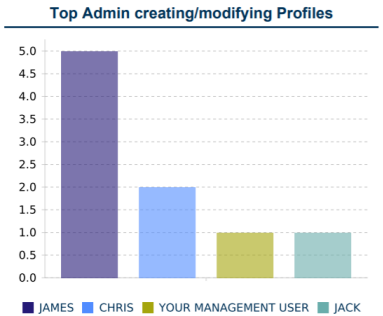
Advanced Template Configuration

- **Other functions**
  - **Timeline** Output:
    - One data frame with at least 2 columns
    - First column is used for the **time dimension**
    - Second for the **associated amplitude**

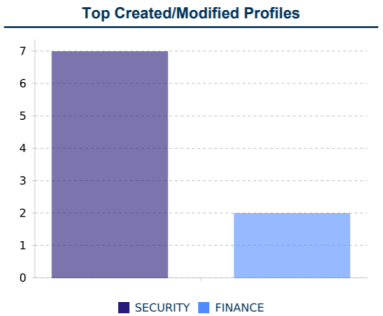


Advanced Template Configuration

- **Other functions**
  - **<u>Bar & Pie chart</u>** <u>Output</u>
    - One data frame with at least 2 columns
    - First columns used for **categories**
    - Second : for the **associated size**



Admin User	No Events
JAMES	5
CHRIS	2
YOUR MANAGEMENT USER	1
JACK	1



Profile Created/Modified	No Events
SECURITY	7
FINANCE	2

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Python code for Advanced Templates

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External code import (python)

- Load new python libraries for implementing other algorithms
- Import:
  - File extension supported: *.py
  - Location: /etc/ng-screener/daemon/modules/controlScriptTemplates
  - Packaged with actual python control script
    - And available for import

- Default:
  - Provided file: spark_template_commons.py
  - Contains utilities methods used by control script embedding the custom functions

Provided imports

- PySpark SQL API:

  http://spark.apache.org/docs/2.4.0/api/python/pyspark.sql.html

- Import packages:

```
from pyspark.sql.functions import *
from pyspark.sql.types import *
```

- Supplies fonctions :

Examples	
lit: ‘literal’	Transform a constant into a constant column
col	Access to a column from its name
udf	Build a user-defined function from a python function

Data frame manipulation

- Types:
  - Filtering
  - Selecting
  - Sorting
  - Aggregating / reducing
  - Joining

- Data frames are READ only & Lazy

Data frame manipulation

- Filtering:
  - Row-wise selection according to predicate

```
df = df.filter(df.score > 0.7)
df = df.filter(col('business_reference').like('CUST%'))
df = df.filter('score > 0.7 and score < 0.8')
df = df.limit(100)
```

- Selecting:
  - Manipulations on columns
    - Chosing columns to keep
    - Adding new computed columns

```
cols = ('@timestamp', 'source_user', …)
df = df.select(cols)
```

```
def myfn(col1, col2):
    return …

myudf = udf(myfn, StringType())
df = df.withColumn('new_col',
    myudf(df['col_a'], df['col_b']))
```

```
df = df.withColumn('new_col', lit(42))
```

```
df = df.withColumn('new_col',
    col('col_a') + col('col_b') * 2)
```

Data frame manipulation

- Sorting:
  - Changing the row's sorting order

```
df = df.orderBy(df['col_a'].desc())
```

```
sorting_columns = ('currency', '@timestamp')
# 1 for ascending, 0 for descending order
sorting_orders = (1, 0)
df = df.orderBy(sorting_columns, sorting_orders)
```

- Aggregating / Reducing

```
key_cols = ('user_id', 'trans_type')
per_user_and_trans_type = df.groupBy(key_cols).agg(
    sum('amount').alias('sum_of_amounts'),
    mean('amount').alias('avg_of_amounts')
)
```

Data frame manipulation

- Joining
  - Generates a data frame by merging two others
  - Rows from both frames being associated together using a join expression
  - Expression verbosity depends on
    - column names in both source data frames
    - Join expression itself

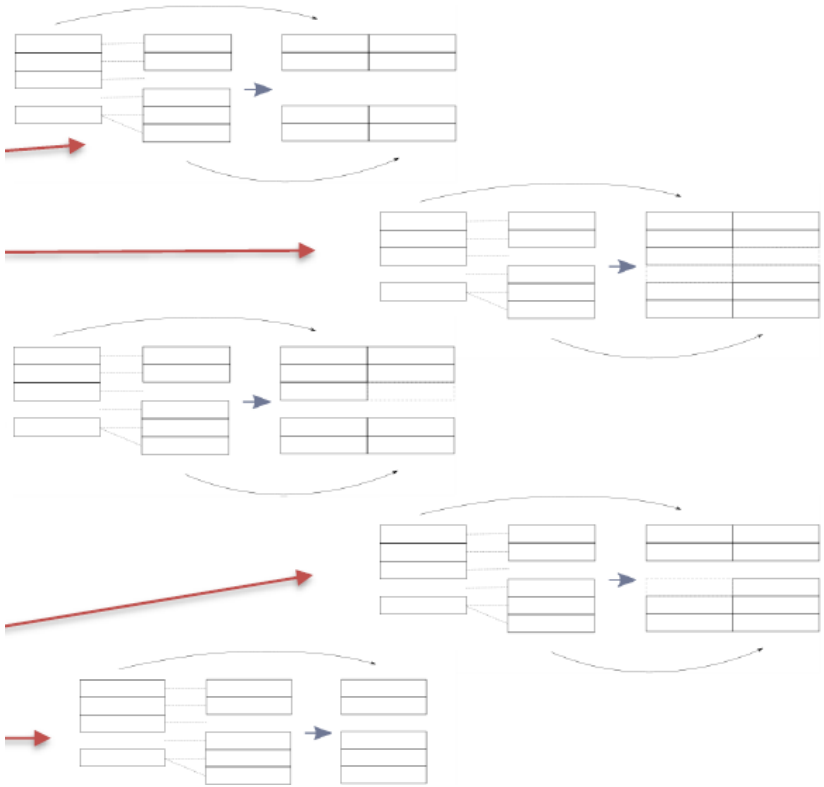
```
df3 = df1.join(df2, ['col_a', 'col_b'])
```

```
df3 = df1.join(df2,
    (df1.col_a == df2.col_a) & (df1.col_b == df2.col_b),
    'left_outer')
```

See next slide for details on this last parameter

Data frame manipulation

- Joining strategies:
  - Inner
  - Outer
  - Left_outer
  - Right_outer
  - Leftsemi



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Controls testing

swiss made software

Controls testing

If errors, Status will be RED

On erroneous occurrence, show contextual menu

Tn02 - Transactions over 10 millions in Specified currency Advanced | PBI | admin

EXECUTION HISTORY

Status	User	Execution da...	Start time	Finish time	Period
ERROR	admin	2019-07-05	18:13:40	18:14:07	From 2019-01-05 18:13 to 2019-07-05 18:13
COMPLETED	admin	2019-07-05	16:56:28	16:57:48	From 2019-01-05 16:56 to 2019-07-05 16:56
COMPLETED	admin	2019-07-05	11:01:50	11:02:47	From 2019-01-05 11:01 to 2019-07-05 11:01

Total entries: 3

Cancel execution

Delete completed executions

Delete failed executions

Show errors

```
Building a jail environment in /tmp/tmp.S4Fhr6TGwD
Mounting /usr/bin read-only on /tmp/tmp.S4Fhr6TGwD/bin
Mounting /etc read-only on /tmp/tmp.S4Fhr6TGwD/etc
Mounting /usr/lib read-only on /tmp/tmp.S4Fhr6TGwD/lib
Mounting /usr/lib64 read-only on /tmp/tmp.S4Fhr6TGwD/lib64
Mounting /srv read-only on /tmp/tmp.S4Fhr6TGwD/srv
Mounting /usr read-only on /tmp/tmp.S4Fhr6TGwD/usr
Mounting /var read-only on /tmp/tmp.S4Fhr6TGwD/var
Remounting /tmp/tmp.S4Fhr6TGwD/var/lib/nfs/rpc_pipefs read-only
Remounting /tmp/tmp.S4Fhr6TGwD/var/log read-only
Switching /var/log mount to /tmp/tmp.S4Fhr6TGwD/var/log as read-only
Mounting /dev read-write on /tmp/tmp.S4Fhr6TGwD/dev
Mounting /sys read-write on /tmp/tmp.S4Fhr6TGwD/sys
Mounting /proc read-write on /tmp/tmp.S4Fhr6TGwD/proc
Mounting /var/log/ng-screener/ngprocessing/ngspark read-write on /tmp/tmp.S4Fhr6TGwD/var/log/ng-screener/ngprocessing/ngspark
Mounting /usr/local/ng-screener/ngprocessing/ngspark read-only on /tmp/tmp.S4Fhr6TGwD/tmp/spark
Mounting /data/spark read-write on /tmp/tmp.S4Fhr6TGwD/data/spark
Mounting /usr/local/ng-screener/ngprocessing/ngspark/history read-write on /tmp/tmp.S4Fhr6TGwD/usr/local/ng-screener/ngprocessing/ngspark
Mounting /data/control/20190705/2682 read-write on /tmp/tmp.S4Fhr6TGwD/data/control/20190705/2682
Running python script
WARNING: Logging before InitGoogleLogging() is written to STDERR
W0705 18:13:51.359792   201 sched.cpp:1714]
**********************************************
Scheduler driver bound to loopback interface! Cannot communicate with remote master(s). You might want to set 'LIBPROCESS_IP' environment
**********************************************
```

Controls testing

- In advanced mode, `print` python statement can be used to build some unit tests
  - Do not forget to remove them afterward → decrease performances

- When control execution is finished, output of control execution (for example python stack trace) is available in `daemon-all.log`

Control Testing

- When done writes a control execution summary in daemon-all.log:

```
Finishing execution of control ID 530 with name [Am01 - Windows Group Changes - mswi] in solution [Internal Fraud] (context 5502)
- Control is a simple PBI control
- Control is not a violation control, as such no ngv hits were exported
- No target exporting has been configured for this execution
- Control execution period was configured as [last 6 month(s)], hence from 2019-02-13T10:22:36.035 to 2019-08-13T10:22:36.035
- Control sources were:
        - microsoftWindows2008SecurityAccountManagement@*
        - microsoftWindows2003SecurityAccountManagement@*
- The user who triggered the execution is [admin]
- The tenant was [DEFAULT]
- Spark script executed from /data/control/20190813/5502/scripts
- The control was configured to use dashboard ID [null]
- The control started execution at 2019-08-13T10:22:41.082 and completed at 2019-08-13T10:23:25.522 (total execution time was 44 seconds)
- Detailed execution statistics
        - Control preparation time was < 1 second
        - Control execution time was 30 seconds
        - Report generation time was 13 seconds
```

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Controls Administration

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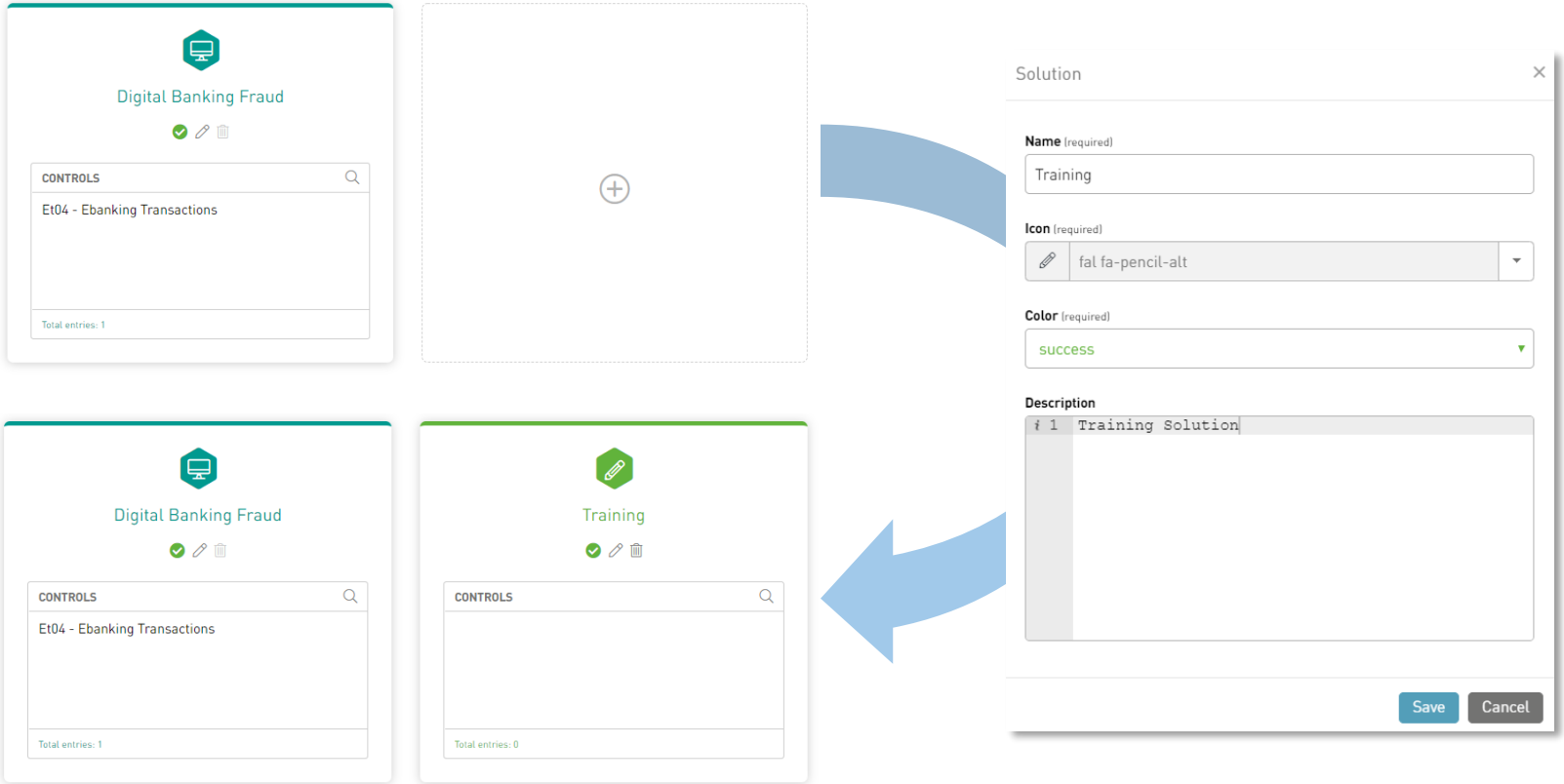
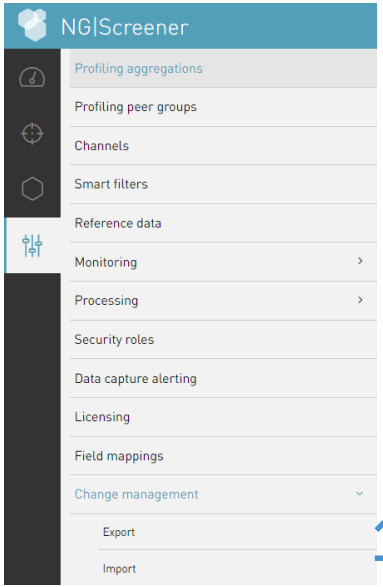
Controls Administration – Create new solution



Controls Administration

- Import/Export Controls (Solutions) from UI



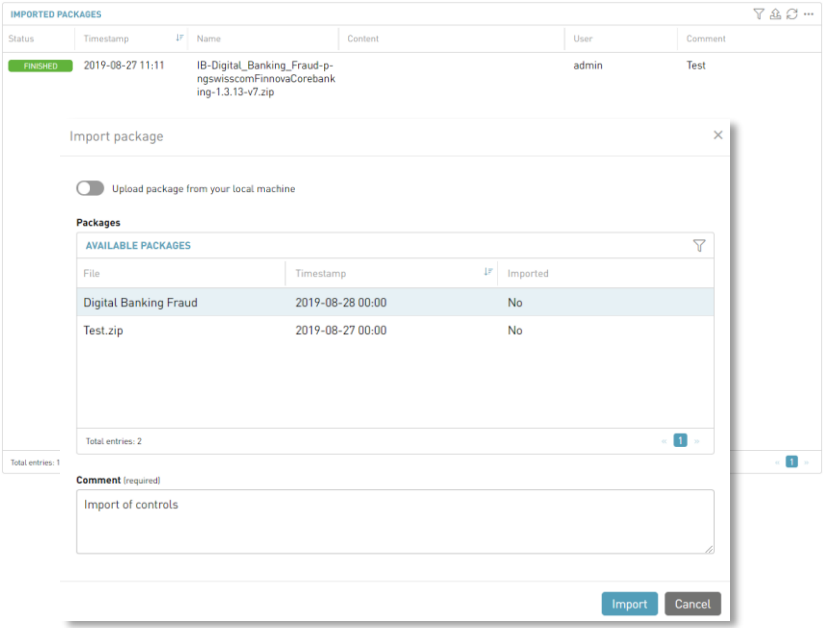
Import and export controls while keeping track of the changes

Export Controls

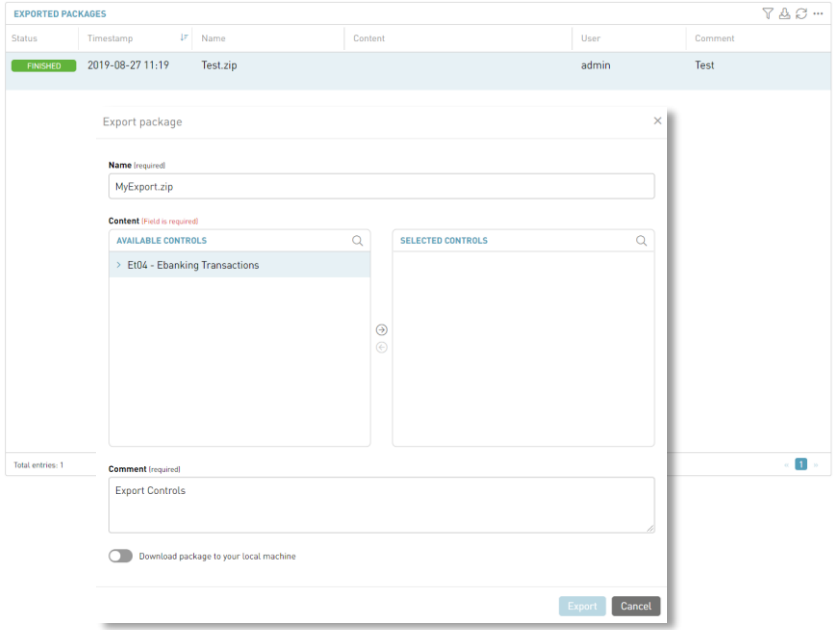
Import Controls

Controls Administration

Import Solution from UI

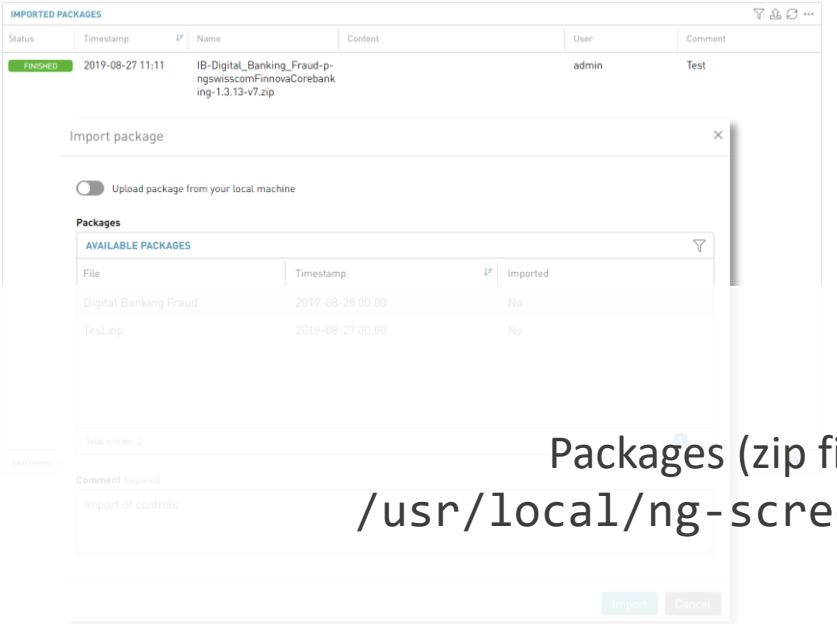


Export Solution from UI

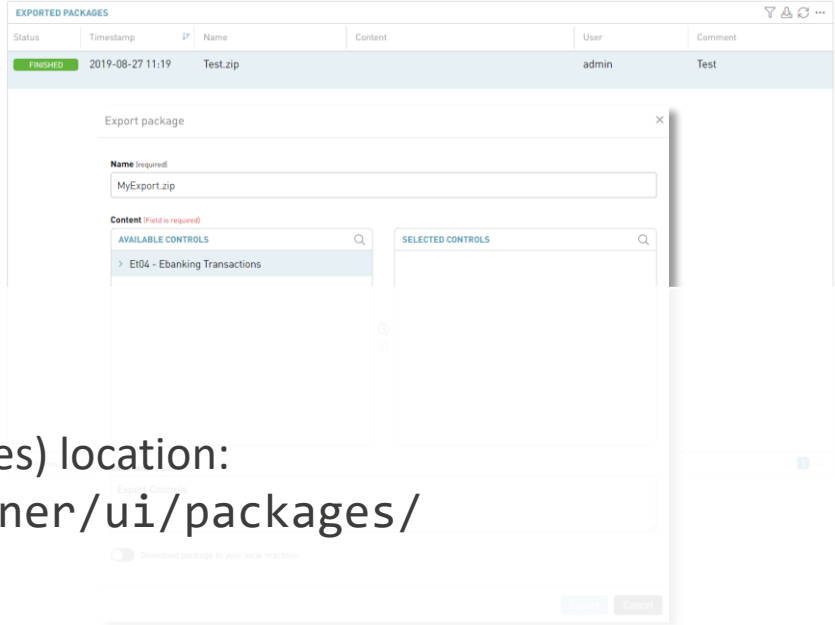


Controls Administration

Import Solution from UI



Export Solution from UI



Packages (zip files) location:

`/usr/local/ng-screener/ui/packages/`

Controls Administration

- Changing controls logo
  - Using **WinSCP** copy the company logo to **NG|**Screener Appliance
  - Connect to the appliance with admin login using **PuTTY**
  - Escalade to root user: *su -*
  - The logo should be named logo.png (overwrite existing) and should be placed in
    /etc/ng-screener/daemon/modules/controlReportTemplates/
  - Example (logo in */home/admin*)
    - *cd /home/admin*
    - *cp logo.png /etc/ng-screener/daemon/modules/controlReportTemplates/*

Controls Administration

- Export Controls with ngadmin command
  - Export controls:
    - `ngadmin --tenant=TENANT_NAME control_extractControls -f /path/to/file.zip '*/*'` (Extract all reports)
    - `ngadmin --tenant=TENANT_NAME control_listControls 'SOL*/Control*'` (To test search criteria)
    - `ngadmin --tenant=TENANT_NAME control_extractControls -f /path/to/file.zip 'SOL*/Control*'`
  - Warning: `File.zip` in this example should be in a location accessible to user `ng-screener`
    - For example: `/tmp` or `/home/ng-screener/`

Controls Administration

- Import Controls with ngadmin command
  - Import controls:
    - `ngadmin --tenant=TENANT_NAME control_addControls -f /path/to/file.zip`
  - Import Solution:
    - `ngadmin --tenant=TENANT_NAME control_importSolution -f /path/to/solution/file.zip`
  - Warning: `File.zip` in this example should be in a location accessible to user `ng-screener`
    - For example: `/tmp` or `/home/ng-screener/`

Controls Administration

- Other useful controls related ngadmin commands
  - `ngadmin control_removeOldExecutions`
    - `Free up some space and clean control execution history`
  - …

Thank you!

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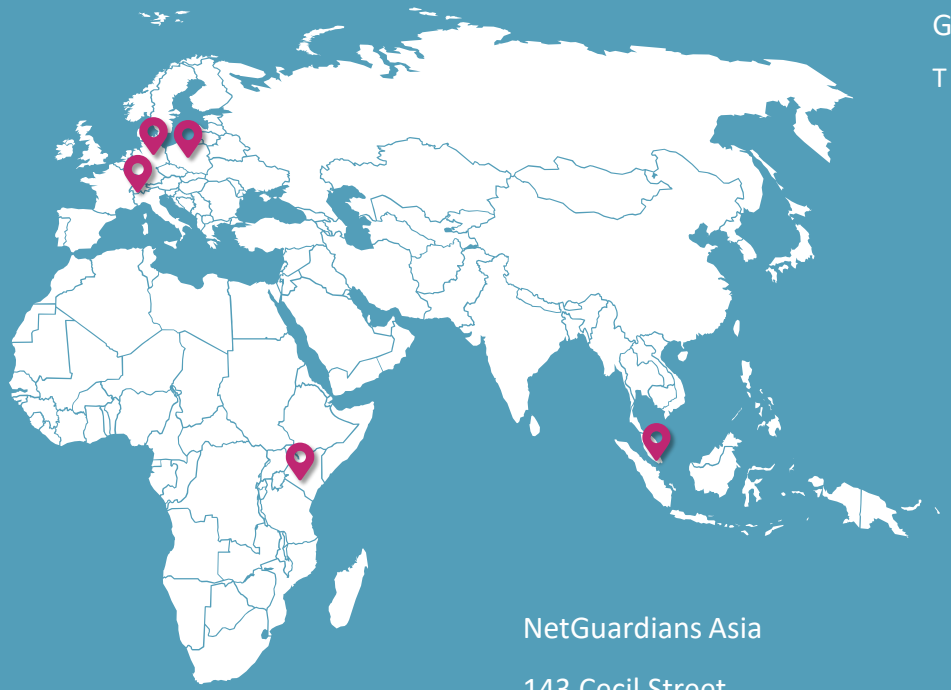

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