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# HCI Export

*Release 0.4.0*

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## INTRODUCTION

Each and every IT system needs some sort of backup/restore, and Hitachi Content Intelligence (HCI) is not different. On one hand, system configuration needs to be secured, but also Workflow details need to be kept safe, and eventually even versioned. Indexes might need backup, as well - even if it's often possible to re-index the data sources.

The **hcieexport** tool wraps some of HCI's features related to these needs into a convenient automation tool.

Features included are:

- Configuration export:
  - Export a complete Workflow bundle (all Workflow-related *configuration* like DataSources, Pipelines, Indexes, Content Classes, Workflows)
  - Export the complete System configuration (all system configuration, plugins, as well as the Workflow configuration)
- Control backup and restore of Indexes:
  - list existing indexes
  - start index backup, get backup status, list backup iterations, delete backups
  - start index restore, get restore status

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**Note:** *hcieexport* is **not performing** backup or restore - it is **triggering** HCI to do so.

It's a pre-requisite to prepare HCI for backup/restore of Indexes, as described in the HCI documentation!

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## INSTALLATION

### 2.1 Using a Python virtual environment

- Create a Python 3.8 (or newer) virtual environment and activate it:

```
$ python3 -m venv .venv
$ source .venv/bin/activate
```

- Install the **hciexport** package:

```
(.venv) $ pip install -U setuptools pip wheel
(.venv) $ pip install hciexport
```

- Create a configuration file as described in the *configuration* chapter
- Now you can run **hciexport** this way:

```
(.venv) $ hciexport -C <config file> --version
```

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**Note:** Remember, every time you want to run **hciexport**, you need to activate the virtual environment before!

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### 2.2 For experts: build an executable

Pre-requisites:

- Python  $\geq 3.8$  and  $< 3.12$  installed (*Nuitka doesn't support Python 3.12 at the time of writing this*)
- git installed
- On Linux, a dev environment (C-compiler and toolchain)
- Set up and activate a Python virtual environment:

```
$ python3 -m venv .venv
$ source .venv/bin/activate
```

- Clone the hcpinsight repository:

```
(.venv) $ git clone https://gitlab.com/simont3/hciexport.git
(.venv) $ cd hciexport
(.venv) $ pip install -r pip-requirements-dev.txt
```

- Compile:

```
(.venv) $ cd src  
(.venv) $ python -m nuitka --onefile hciexport.py
```

This will produce an executable binary that can be moved to a convenient folder (*/usr/local/bin*, likely)

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**Note:** The procedure above will work on Windows, too. It doesn't require a C-compiler to be present, as Nuitka will offer to install what is needed. Just allow it to do so.

Unfortunately, it turns out that the executable built is triggering an alarm (and its removal) by MS Defender Anti-Virus. This is a false alarm, but that doesn't help :-)

This can be worked around by running the compiler this way:

```
(.venv) > python -m nuitka --standalone hciexport.py
```

In this case, there will be a folder *hciexport.dist*, including the executable *hciexport.exe*, along a few other library files. All of these are needed, and *hciexport.exe* needs to be located along with them. Nevertheless, as you move the entire folder, it's fine. Don't forget to add the folder to %PATH%.

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## CONFIGURATION

Configuration data needed by **hciexport** has to be configured in a configuration file. Use the template below to create it.

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**Note:** If the specified config file does not exist, *hciexport* will offer to write a template configuration file with the given name. Just edit that one and then run *hciexport* again!

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Template:

```
[HCI]
# The HCI's FQDN, like myhci.mydomain.com
HCIFQDN = <HCI FQDN>
ADMINAPIPORT = 8000
SEARCHAPIPORT = 8888
WORKFLOWAPIPORT = 8888
USER = <user>
PASSWORD = <it's password>
# the REALM is either 'local' for the built-in admin user or whatever
# REALM was configured when integrating HCI with an external IDP
REALM = <realm>
GRANTTYPE = password
CLIENTSECRET = hciexport
CLIENTID = hciexport

[system]
# a default filename of your choice
OUTPUTFILE = hciexport.system.package

[workflows]
# a default filename of your choice
OUTPUTFILE = hciexport.workflow.bundle
```

Changed in version 0.4.0.

## 4.1 Prerequisites

- **hciexport** has been installed in a Python virtual environment
- The virtual environment has been activated
- A configuration file (`hciexport.cnf`) has been created

## 4.2 Return Codes

*hciexport* emits these return codes on exit:

- 0 - success
- 1 - fail
- 2 - cli parameter issue

## 4.3 General Syntax

```
hciexport -C hciexport.cnf -h
usage: hciexport [-h] [--version] -C CONFIGFILE \
               {export,index,backup,restore} ...

options:
  -h, --help            show this help message and exit
  --version             show program's version number and exit
  -C CONFIGFILE         configuration file

commands:
  {export,index,backup,restore}
    export              export system configuration or workflow bundle
    index               list indexes
    backup              index backup functions
    restore             restore an index
```

## 4.4 Configuration Export

```
hciexport -C hciexport.cnf export -h
usage: hciexport export [-h] [-o OUTFILE] {system,workflows}

positional arguments:
  {system,workflows}  the task within the config file

options:
  -h, --help          show this help message and exit
  -o OUTFILE          the file to write the export to (set default in config file)
```

### 4.4.1 Export the Workflow configuration

```
(.venv) $ hciexport -C hciexport.cnf export workflows
retrieving workflows:          OK (7)
retrieving dataSources:       OK (6)
retrieving pipelines:         OK (14)
retrieving indexes:           OK (6)
retrieving contentClasses:    OK (3)
exporting workflows:          OK (hciexport.workflow.bundle)
```

### 4.4.2 Export the System configuration

```
(.venv) $ hciexport.py -C hciexport.cnf export system
retrieving business objects:   OK
retrieving security settings:  OK
retrieving identity providers: OK
retrieving groups:             OK
retrieving roles:              OK
retrieving notification rules: OK
retrieving client certificates: OK
retrieving system certificates: OK
retrieving plugin bundles:     OK
building package:              OK
exporting system config:       OK (hciexport.system.package)
```

## 4.5 Indexes

```
hciexport -C hciexport.cnf index -h
usage: hciexport index [-h] [-v]

options:
  -h, --help  show this help message and exit
  -v          verbose, include index statistics
```



### 4.5.1 List existing Indexes

```
(.venv) $ hciexport -C hciexport.cnf index -v
```

index	docs	size	IPL	shards
email_idx	244192	10.55 GiB	2	18
thorsten_idx	122096	5.27 GiB	1	18

## 4.6 Index Backup

```
hciexport -C hciexport.cnf backup -h
usage: hciexport backup [-h] {start,status,list,delete} ...

options:
  -h, --help            show this help message and exit

backup subcommands:
  {start,status,list,delete}
    start                start a backup
    status               get backup status
    list                 list backups
    delete               delete backups
```

### 4.6.1 Start an Index Backup

```
(.venv) $ hciexport -C hciexport.cnf backup start thorsten_idx
Backup of "thorsten_idx" started
```

### 4.6.2 Get Index Backup status

```
(.venv) $ hciexport -C hciexport.cnf backup status thorsten_idx
thorsten_idx: COMPLETED
```

### 4.6.3 Get a list of Backup iterations

```
(.venv) $ hciexport -C hciexport.cnf backup list thorsten_idx
backupId | start Timestamp
-----+-----
0 - 2024-03-19T19:06:47.451Z
1 - 2024-03-19T19:08:45.008Z
```

#### 4.6.4 Delete a Backup

```
(.venv) $ hciexport -C hciexport.cnf backup delete --full_delete thorsten_idx
thorsten_idx: delete ({'deleteAllBackups': True}) successful
```

### 4.7 Index Restore

```
hciexport.py -C .\hciexport.cnf restore -h
usage: hciexport.py restore [-h] {start,status} ...

options:
  -h, --help            show this help message and exit

restore subcommands:
  {start,status}
    start                start a restore
    status               get restore status
```

#### 4.7.1 Start an Index Restore

```
(.venv) $ hciexport -C hciexport.cnf restore start email_idx thorsten_idx -1
email_idx (-1) -> thorsten_idx: restore started
```

#### 4.7.2 Get Index Restore Status

```
(.venv) $ hciexport -C hciexport.cnf restore status thorsten_idx
thorsten_idx: COMPLETED
```

## RELEASE HISTORY

### **0.4.0 2024-03-20**

**Warning:** the configuration file structure has changed!

added Index backup and restore functionality

### **0.3.2 2020-10-18**

installer issue fixed

### **0.3.0 2020-10-18**

added documentation, package ready to publish

### **0.2.0 2020-10-14**

export system config

### **0.1.0 2020-10-04**

export workflows

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