# Federator.ai Kubernetes Usage Cost Helper Utility

This utility collects node and controller data of the Kubernetes cluster from Federator.ai, primarily for archival purposes. A summary of the collected data is presented in an Excel spreadsheet that displays the total count of nodes, CPU and memory usage, and the overall cost of the Kubernetes cluster.

## Utility

* **Juniper\_kubernetes\_usage\_20240116.xlsx** – Excel spreadsheet displays the total count of nodes, CPU and memory usage, and the overall cost of the Kubernetes cluster.
* **k8s-usage-cost-collect.sh** – Linux bash script for collecting node and controller data of the Kubernetes cluster.

Federator.ai Kubernetes Node/Controller/Application Usage and Cost Statistics Collector v1.0.0

k8s-usage-cost-collect.sh [options]

Mandatory options:

-h, --host='' Federator.ai API host(ip:port) (DEFAULT: '127.0.0.1:31012')

-u, --username='' Federator.ai API user name (DEFAULT: 'admin')

-p, --password='' Federator.ai API password (or read from 'F8AI\_API\_PASSWORD')

-c, --cluster='' Target Kubernetes cluster name

Optional options:

-d, --directory='' Local path where .csv files will be saved (DEFAULT: '.')

-r, --resource='both' Generate Node('node') and/or Controller('controller') .csv (DEFAULT: 'both')

-l, --logfile='' Full path of the log file (DEFAULT: './k8s-resource-collect.log')

-t, --pastperiod='' Past period in days for getting the usage (DEFAULT: '183')

Examples:

k8s-usage-cost-collect.sh --host=127.0.0.1:31012 --username=admin --password=xxxx --cluster=h3-61

## Requirements

* Microsoft Windows 10 and above
* Microsoft Excel 2016 and above, Windows version
* Linux or MacOS with bash version 4 or above

* [jq command-line JSON processor](https://jqlang.github.io/jq/) version 1.6 or above

## Steps

The “k8s-usage-cost-collect.sh” script helps users to collect Kubernetes cluster data and save the data to 8 CSV files, “app-cost-raw.csv”, “app-cpu-raw.csv”, “app-mem-raw.csv”, “ctrl-cpu-raw.csv”, “ctrl-mem-raw.csv”, “node-cost-raw.csv”, “node-count-raw.csv”, “node-cpu-raw.csv”, “node-mem-raw.csv”. The “Juniper\_kubernetes\_usage\_20240116.xlsx“ spreadsheet is configured to automatically load the data from the CSV files when the spreadsheet is opened.

1. Upload the “k8s-usage-cost-collect.sh” script to a Linux or MacOS host which has bash version 4 or above installed.
2. Run the script with the required options, “--host” and “--password”. By default, the two CSV files are saved in the same directory of the script.

~# bash k8s-usage-cost-collect.sh -h s4.sandbox.prophetstor.com -u admin -p xxx -c prom334

Federator.ai Kubernetes Node/Controller/Application Usage and Cost Statistics Collector v1.0.0

(It may take a few minutes to complete...)

Start collecting Application and Controller data:

..........................

Successfully created Application and Controller .csv.

Start collecting Node resource data:

...................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................................

Successfully created Node resource .csv.

~#

~# ls -l \*.csv

-rw-r--r--. 1 root root 2238 Jan 21 12:26 app-cost-raw.csv

-rw-r--r--. 1 root root 953 Jan 21 12:26 app-cpu-raw.csv

-rw-r--r--. 1 root root 2040 Jan 21 12:26 app-mem-raw.csv

-rw-r--r--. 1 root root 7656 Jan 21 12:27 ctrl-cpu-raw.csv

-rw-r--r--. 1 root root 21045 Jan 21 12:27 ctrl-mem-raw.csv

-rw-r--r--. 1 root root 13317 Jan 21 12:27 node-cost-raw.csv

-rw-r--r--. 1 root root 404 Jan 21 12:27 node-count-raw.csv

-rw-r--r--. 1 root root 3533 Jan 21 12:27 node-cpu-raw.csv

-rw-r--r--. 1 root root 8249 Jan 21 12:27 node-mem-raw.csv

1. Create a new folder, “C:\Data”, on your Windows desktop, copy the spreadsheet to the folder, and download the two CSV files to the same folder.
2. Open the “C:\Data\Juniper\_kubernetes\_usage\_20240116.xlsx” spreadsheet. It may take a while to compile the data from CSV files and show the charts.

Note:

* The utility requires the additional “jq” JSON processor to parse the JSON format output. Please download “jq” from <https://jqlang.github.io/jq/> and install it in your executables directory.
* It is the limitation of Excel that the spreadsheet can only be configured to automatically load CSV files in a fixed location. This spreadsheet is configured to load the two CSV files in the “C:\Data” folder by default.

If you want to change the location of the two CSV files, the configuration is in

1. “Excel 🡪 Data 🡪 Queries & Connections”.
2. Double-click the “node-raw” in the “Queries & Connections” panel.
3. Click “Source” in the “Query Settings” panel.
4. Change the absolute path in “File.Contents()”
5. Close & Load

Make the same change for another CSV file.

