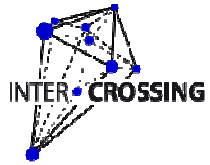

Nispero

Marina Manrique

2013-08-28

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content

- What is this?
- Architecture and players
- Nispero + Statika
- Why Nispero is cool for NGS data analysis?
- Hands-on Nispero

What is this?

loquats

INTER•CROSSING
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What is this?

A component to scale independent tasks

Basic building block to implement distributed systems

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Architecture and players

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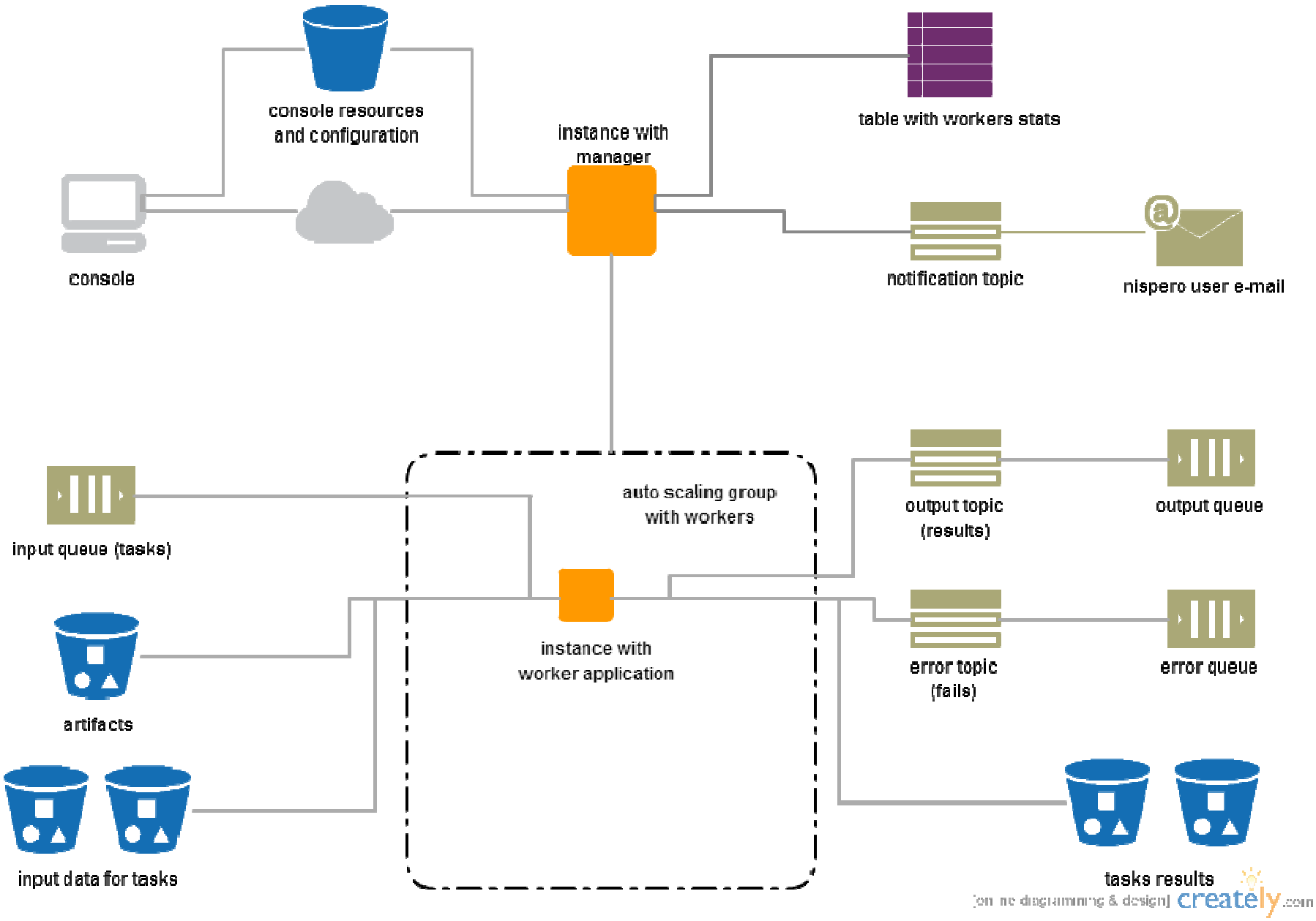
console resources
and configuration
instance with
manager
table with workers stats
console
notification topic
nispero user e-mail
auto scaling group
with workers
input queue (tasks)
output topic
(results)
output queue
instance with
worker application
artifacts
error topic
(fails)
error queue
input data for tasks
tasks results
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Nispero + Statika

You need to configure the workers!!

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Why Nispero is cool for NGS data analysis?

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Why Nispero is cool for NGS data analysis?

parallel automatic tasks
horizontal scaling

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Why Nispero is cool for NGS data analysis?

parallel automatic tasks
horizontal scaling

- Easy to use
- Easy to reuse
- Robust

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Why Nispero is cool for NGS data analysis?

usual parallel tasks in NGS data analysis

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Why Nispero is cool for NGS data analysis?

usual parallel tasks in NGS data analysis

- QA
- Reads Preprocessing: trimming, filtering
- Blast

Why Nispero is cool for NGS data analysis?

Samples are parallel

Reads are parallel

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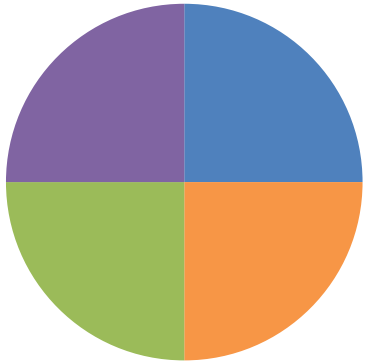
Why Nispero is cool for NGS data analysis?



100Gb
X min

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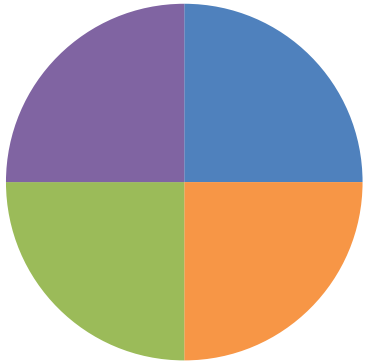
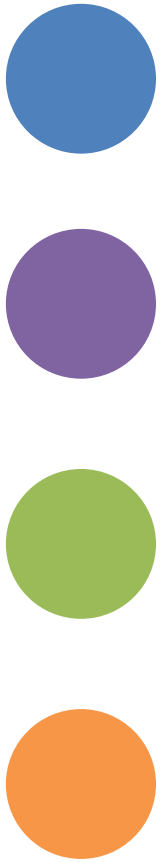
Why Nispero is cool for NGS data analysis?

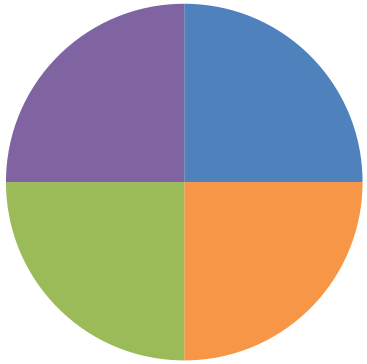


100Gb
X min

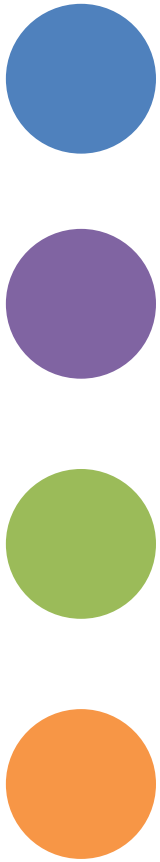


X/4 min

Why Nispero is cool for NGS data analysis?



100Gb
X min



Samples

Reads

~X/16 min

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Why Nispero is cool for NGS data analysis?

horizontal scaling

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Why Nispero is cool for NGS data analysis?

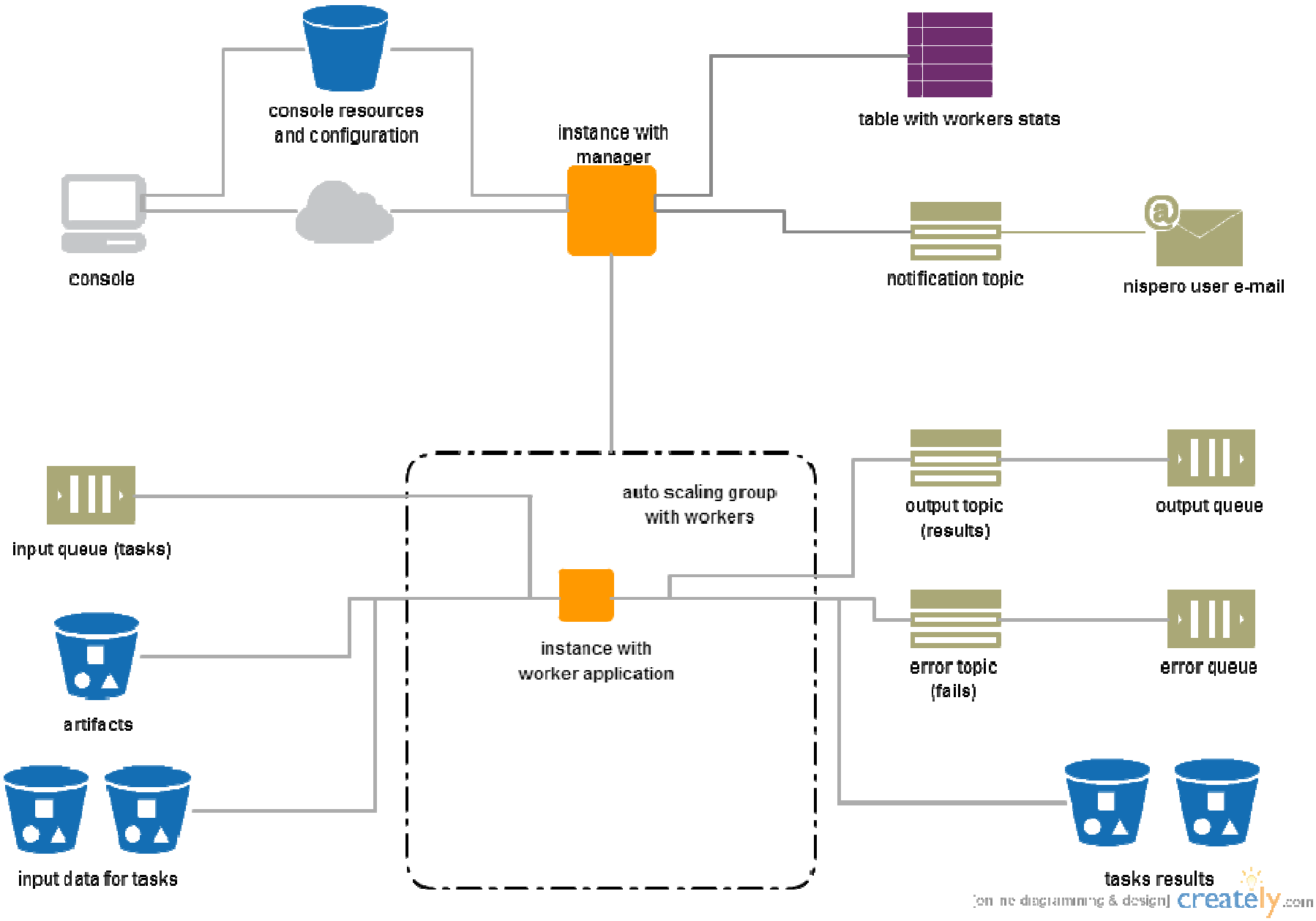
horizontal scaling

limited number of different instances types

Why Nispero is cool for NGS data analysis?

horizontal scaling

limited number of different instances types : cr1.8xlarge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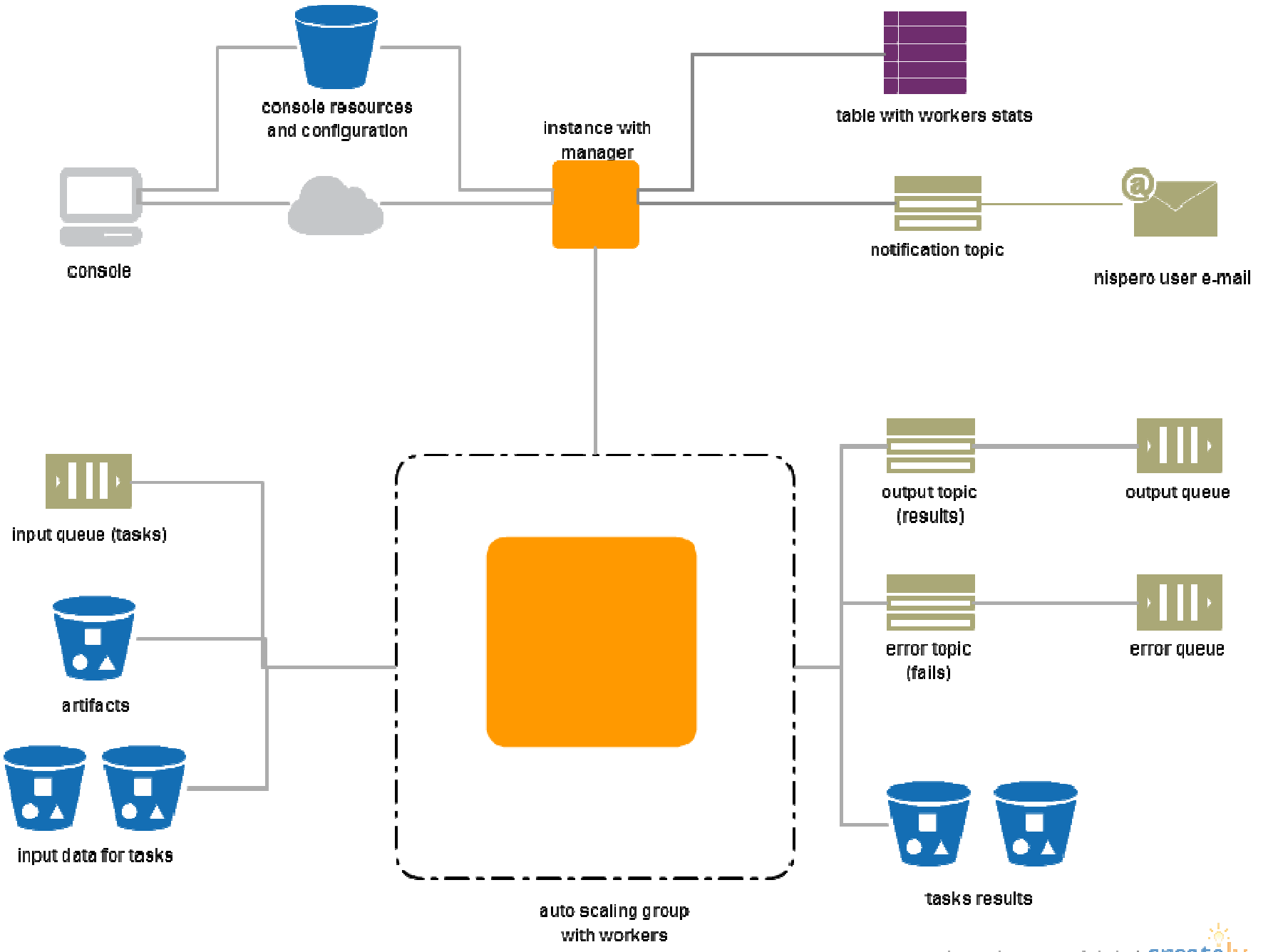
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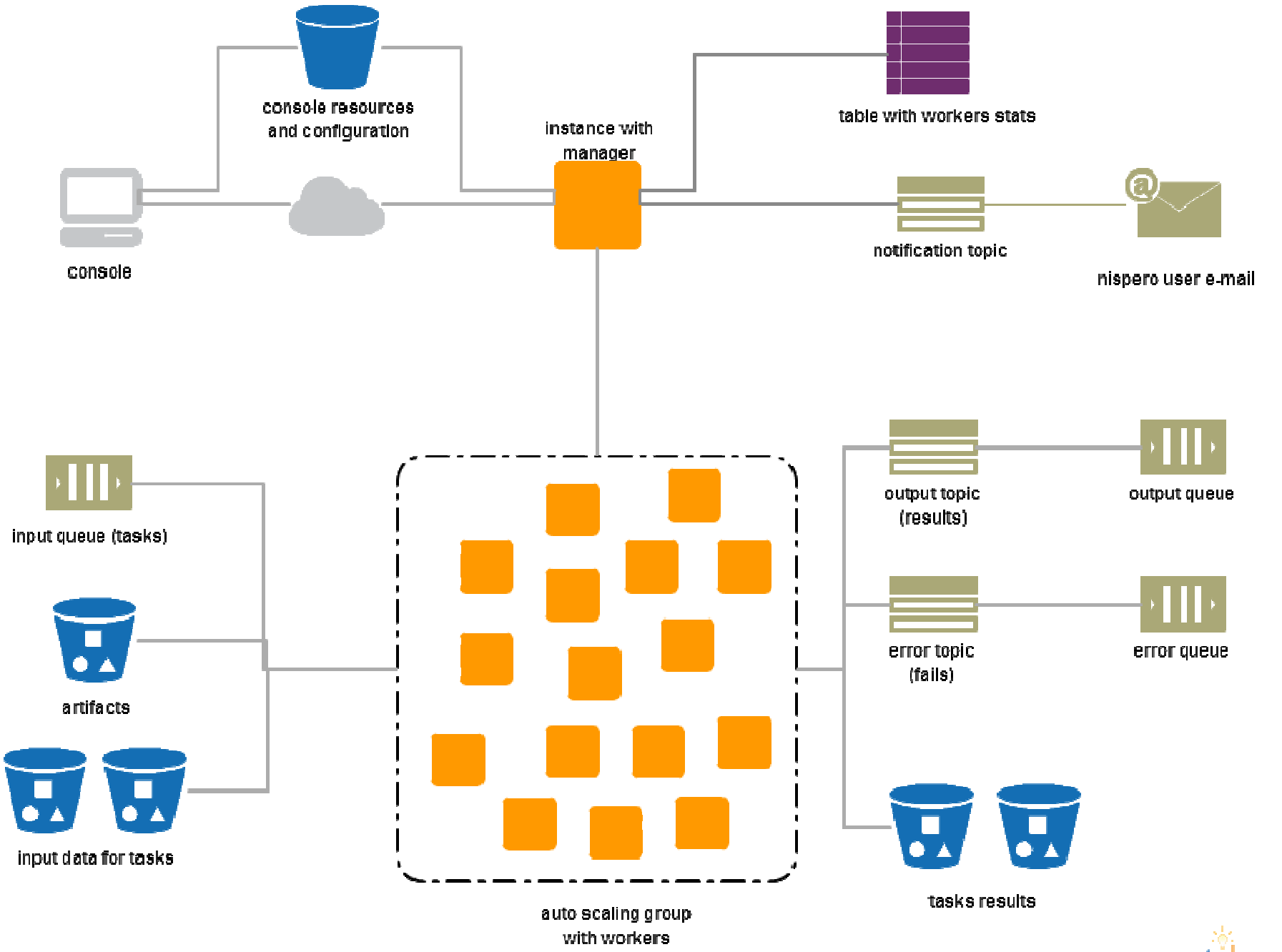

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Hands-on Nispero

Now it’s your turn

You’re going to try to use Nispero to run two parallel blast

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Hands-on Nispero

Now it’s your turn

You’re going to try to use Nispero to run two parallel blast

And Kim please support the others but let them try by themselves :)

Hands-on Nispero

How to run a Nispero

1. Set up the environment
2. Prepare the tasks file
3. Prepare the scripts
4. Download
5. Set up the configuration file
6. Publish the folder
7. Run Nispero
8. Terminate

nispero-usage.md

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Hands-on Nispero

1. Set up the environment

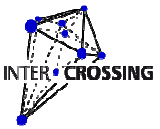
aws-linux-env-setup.md

Standard Linux Amazon m2.xlarge Spot request

God mode + right key pair

Hands-on Nispero

2. Prepare the tasks file




```
"id": "task1",
  "inputObjects":{
    "database":{
      "bucket":"team1-resources",
      "key":"input/NC_000913.fna"
    },
    "query":{
      "bucket":"team1-resources",
      "key":"input/E-coli-rna.frn"
    }
  },
  "outputObjects":{
    "results":{
      "bucket":"team1-resources",
      "key":"results/ecoli-blastresults.txt"
    }
  }
```

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2. Prepare the tasks file

Put the tasks file in a bucket in S3

Hands-on Nispero

3. Prepare the scripts

- Workers configuration (Statika?)

- Run the task (Blast)

Hands-on Nispero

4. Download

4.1 Connect to the instance you launched at 1.

4.2 Download Nispero to the instance https://github.com/ohnosequences/cloud-ngs-course/blob/master/nispero-task/nispero-usage.md#download

Name + mail

Hands-on Nispero

5. Set up the configuration.scala file

5.1 Use VIM to edit the config file

5.2 https://github.com/ohnosequences/cloud-ngs-course/blob/master/nispero-task/nispero-usage.md#setup-your-configuration

Hands-on Nispero

6. Publish

https://github.com/ohnosequences/cloud-ngs-course/blob/master/nispero-task/nispero-usage.md#publish

7. Run

https://github.com/ohnosequences/cloud-ngs-course/blob/master/nispero-task/nispero-usage.md#run

Hands-on Nispero

8. Terminate / Undeploy

AGPL
Free Software
3
Free as in Freedom