

MINISOC



SCOPO DEL PROGETTO



MONITORING

Collezionare, categorizzare e analizzare i dati ricevuti, statistiche ed eventi critici dell'infrastruttura



ANALYSIS

Network analysis, Malware analysis, report di findings



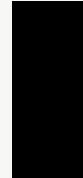
RESPONSE

Fornire capacità di difesa attiva e analisi su tutta l'infrastruttura



SCALABLE & RELIABLE

L'intero progetto è basato su Kubernetes, cloud e soluzioni di autoscaling



MICROSERVIZIO: SOC



- Interagisce con l'utente finale
- Invia richieste agli altri microservizi
- Supporta **l'autenticazione**
- Fornisce le **dashboard** di sicurezza
- **Monitora** le applicazioni scelte dall'utente



Flask



MICROSERVIZIO: TOOL



- Utilizza tool come **YARA** e **TSHARK**
- **Network analysis** di *pcap* caricati tramite il SOC
- **Malware analysis** di *file* caricati tramite il SOC
- Raggiungibile solo dal SOC



 **VIRUSTOTAL**



 **WIRESHARK**



MICROSERVIZIO: APP

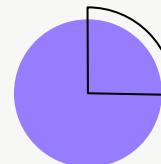


- Semplice servizio **web**
- Applicazione esposta su Internet
- Può essere sostituita con una vera applicazione da monitorare

NGINX



GoAccess





KUBERNETES

Grazie a Kubernetes il deploy può essere automatizzato, esteso e facilmente configurato a runtime. La divisione delle risorse presenti è nel seguente modo

DEPLOYMENT



Microservizi che compongono il progetto

SERVICES



Networking e balancing verso internet

HPA



Autoscale dei microservizi

VOLUMES



Condivisione dei dati tra i Microservizi

CONFIGMAP



Configurazione parametrica





HELM

Helm permette di facilitare il deployment fornendo template personalizzabili.
Abbiamo utilizzato Helm per installare le seguenti risorse

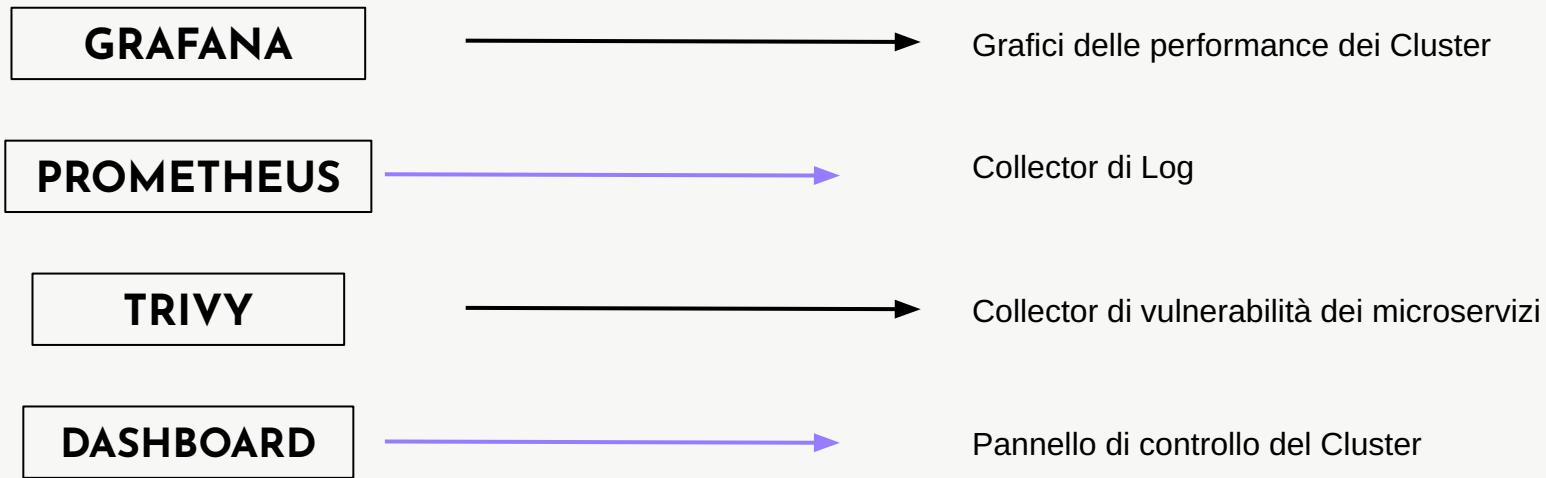


DIAGRAMMA APPLICATIVO

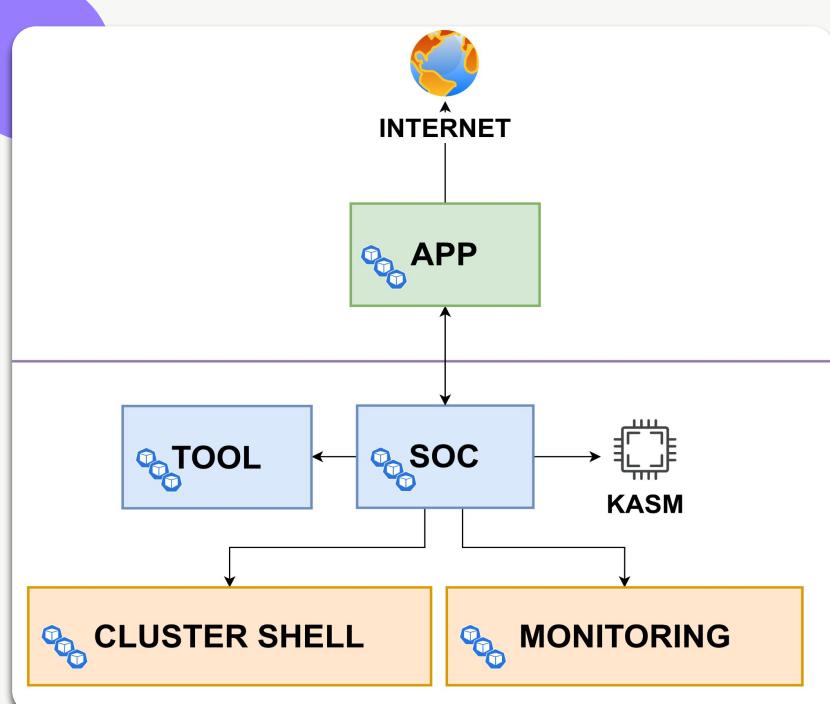
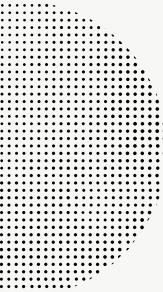
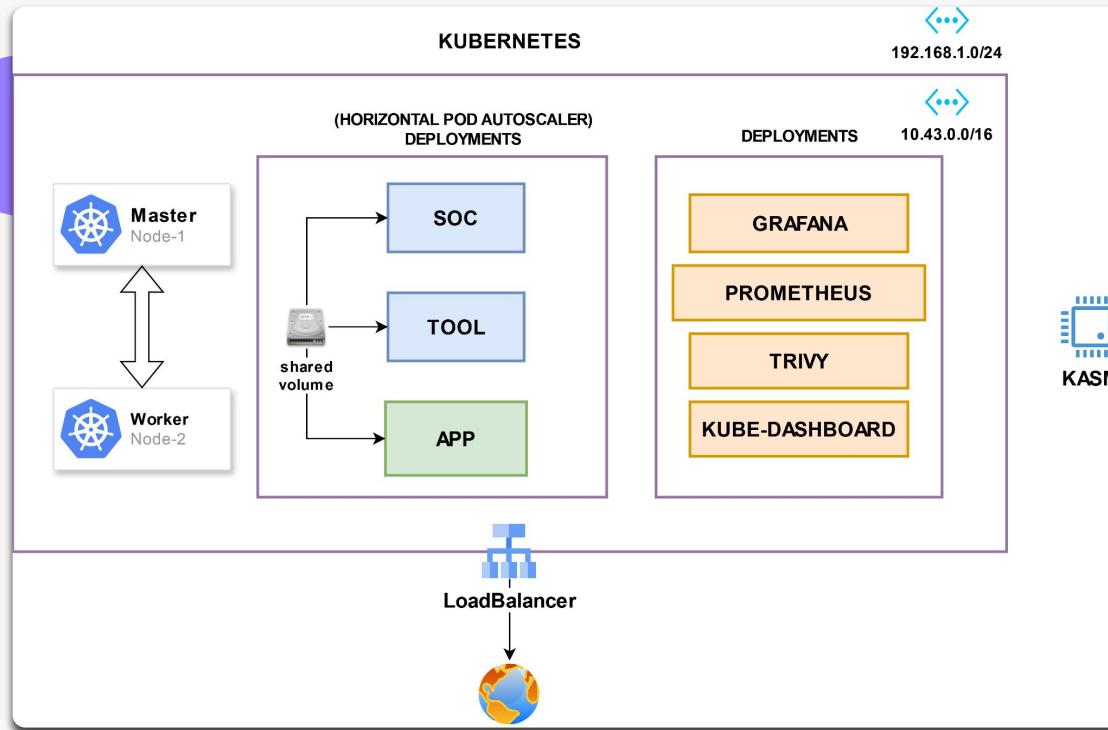


DIAGRAMMA INFRASTRUTTURA





LANDING PAGE

The screenshot shows a dark-themed web application interface. On the left, a sidebar contains navigation links such as Cluster, Security (Network Analyzer, Malware Analyzer, Kasm), Statistics (CoreDNS, Pods Workload - Master, Pods Workload - Worker, Volumes, Networking, Application Statistics), and Trivy. A purple button labeled "MiniSoc" is prominent, along with a GitHub button. The main content area features a large, stylized "MiniSOC" logo in white and yellow. At the bottom of the page, there is footer text: "© FlippaFloppa - Coded by BlessedRebuS, leonardobambini, RootLeo00.", "The GNU General Public License v3.0", and a small "FlippaFloppa" logo.





DASHBOARD

Kubernetes All namespaces Search

Workloads > Deployments

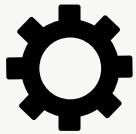
CPU Usage

Memory Usage

Deployments

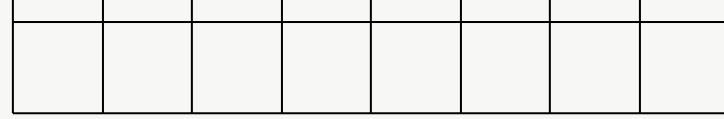
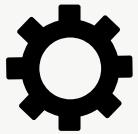
Name	Namespace	Images	Labels	Pods	Created
data-proxy-server	iot	docker.io/umbo-iot/python-data-proxy-server:latest	-	1 / 1	17 hours ago
kubernetes-dashboard-long	kubernetes-dashboard	kong:3.6	app.kubernetes.io/component: app app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: metrics-scrapers app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: web app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: auth app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: api app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm	1 / 1	4 days ago
kubernetes-dashboard-metrics-scaper	kubernetes-dashboard	docker.io/kubernetes/dashboard-metrics-scaper:1.1.1	app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: metrics-scrapers app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm	1 / 1	4 days ago
kubernetes-dashboard-web	kubernetes-dashboard	docker.io/kubernetes/dashboard-web:1.3.0	app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: web app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: auth app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: api app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm	1 / 1	4 days ago
kubernetes-dashboard-auth	kubernetes-dashboard	docker.io/kubernetes/dashboard-auth:1.1.3	app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: auth app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm	1 / 1	4 days ago
kubernetes-dashboard-api	kubernetes-dashboard	docker.io/kubernetes/dashboard-api:1.5.0	app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm app.kubernetes.io/component: api app.kubernetes.io/instance: kubernetes-dashboard app.kubernetes.io/managed-by: Helm	1 / 1	4 days ago
soc	monitoring	docker.io/library/soc:v1	-	1 / 1	4 days ago
ingress-nginx-controller	ingress-nginx	nginx.ingress.k8s.io/controller:v1.2.0@sha256:db196e0bc1e7254765dec6d3cc0f72a291a091a20c08e770bc50597148	app.kubernetes.io/component: controller app.kubernetes.io/instance: ingress-nginx app.kubernetes.io/name: ingress-nginx app.kubernetes.io/managed-by: Helm	1 / 1	5 days ago
tool	monitoring	docker.io/library/tool:v1	-	1 / 1	8 days ago
emqx-operator-controller-manager	emqx-operator-system	emqx/emqx-operator-controller:2.2.22	app.kubernetes.io/instance: emqx-operator app.kubernetes.io/managed-by: Helm app.kubernetes.io/name: emqx-operator app.kubernetes.io/managed-by: Helm	1 / 1	13 days ago

1 – 10 of 25 | < < > >|



NETWORK ANALYZER

The screenshot displays the Network Analyzer interface within a dark-themed application. On the left, a vertical sidebar menu lists several sections: Dashboard, Security (Network Analyzer, Malware Analyzer, Kasm), Statistics (CoreDNS, Pods Workload - Master, Pods Workload - Worker, Volumes, Networking, Application Statistics, Trivy), and a general Home and Cluster section. The 'Network Analyzer' section is currently selected, indicated by a purple background. The main content area is titled 'Analyzer' and contains a sub-section titled 'Network Analyzer'. Below this are tabs for SSH, HTTP, DNS, ICMP, SSL, and TCP, with 'Network Analyzer' being the active tab. A large dashed rectangular area in the center is labeled 'Drop files here or click to upload.' A 'Clear' button is located just above this area. At the top of the main content area, there is a search bar with the placeholder 'Search here...' and a three-dot menu icon. The top right corner features icons for brightness, notifications, user profile, and settings.

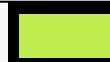


MALWARE ANALYZER 1/2

The screenshot shows a dark-themed user interface for a Malware Analyzer. On the left is a sidebar with navigation links:

- Dashboard
- Home
- Cluster
- Security
 - Network Analyzer
 - Malware Analyzer
- Kasm
- Statistics
 - CoreDNS
 - Pods Workload - Master
 - Pods Workload - Worker
 - Volumes
 - Networking
 - Application Statistics
 - Trivy

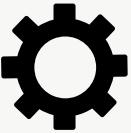
The main content area is titled "Analyzer" and contains a sub-section "Malware Analyzer". It features a purple button labeled "Malware Analyzer" and a smaller purple button labeled "Clear". Below these buttons is a dashed rectangular area with the text "Drop files here or click to upload." A search bar at the top has the placeholder "Search here...". The top right corner includes icons for brightness, notifications, and user profile.





MALWARE ANALYZER 2/2

The screenshot displays a web-based interface for a malware analyzer. On the left, a sidebar menu includes options like Dashboard, Home, Cluster, Security (Network Analyzer, Malware Analyzer), Kasm (selected), Statistics (CoreDNS, Pods Workload - Master, Pods Workload - Worker, Volumes, Networking, Application Statistics), and Trivy. The main workspace is titled 'Kasm' and features a 'WORKSPACES' tab and an 'ADMIN' tab. A central modal window is titled 'Launch Windows' and contains a 'Windows' section, an 'Open Session In' dropdown set to 'New Tab', and a prominent blue 'Launch Session' button. The background of the workspace shows a scenic view of snow-capped mountains reflected in a calm lake under a dark sky.



APPLICATION STATISTICS

Search here...

Last Updated: 2024-05-31 10:52:20 +0000
09/MAY/2024 — 28/MAY/2024

OVERALL ANALYZED REQUESTS

Total Requests 113	Valid Requests 113	Failed Requests 0
Prev IP Hits 0	Referrals 0	Not Found 5

UNIQUE VISITORS PER DAY - INCLUDING SPIDERS
HTS HAVING THE SAME IP DATE AND AGENT ARE A UNIQUE VISIT

Date	Hits	Visitors
09/05/2024	~28	~0.8
10/05/2024	~25	~0.7
11/05/2024	~20	~0.6
12/05/2024	~15	~0.5
13/05/2024	~10	~0.4
14/05/2024	~8	~0.3
15/05/2024	~5	~0.2
16/05/2024	~3	~0.1
17/05/2024	~2	~0.1
18/05/2024	~1	~0.1
19/05/2024	~1	~0.1
20/05/2024	~1	~0.1
21/05/2024	~1	~0.1
22/05/2024	~1	~0.1
23/05/2024	~1	~0.1
24/05/2024	~1	~0.1
25/05/2024	~1	~0.1
26/05/2024	~1	~0.1
27/05/2024	~1	~0.1
28/05/2024	~1	~0.1

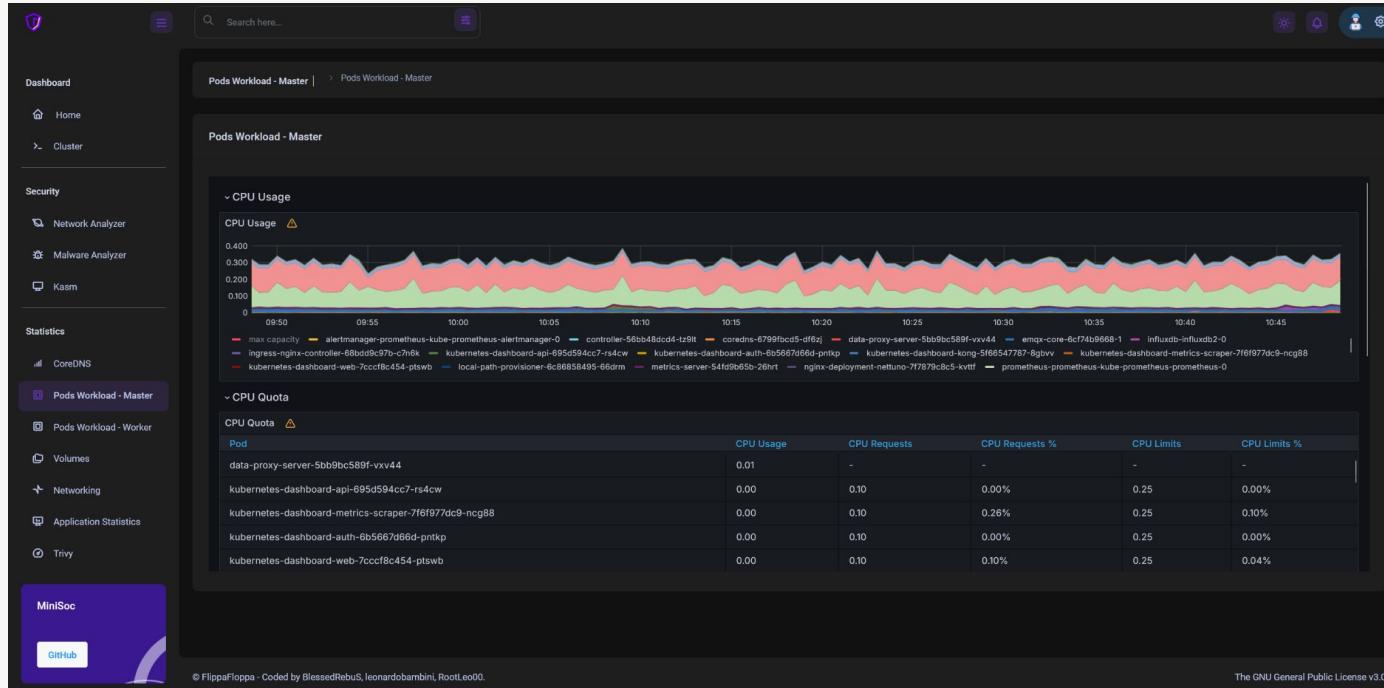
REQUESTED FILES (URLS)
TOP REQUESTS SORTED BY HTS [A/GTS, CUMTS, MAXTS, MTHD, PROT]

File	Hits	Visitors
index.html	10	5
style.css	4	4
script.js	3	3
image.png	2	2
favicon.ico	1	1

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CLUSTER PERFORMANCES



NODI & DEPLOYMENTS



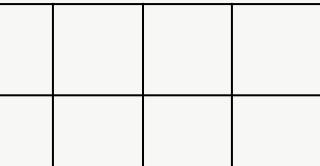
- Ogni elemento dell'applicazione è un **deployment**
- In presenza di poche o nulle richieste ogni deploy ha 1 solo pod
- I deployment sono bilanciati su **due nodi**

Nodes(all) [2]												
NAME↑	STATUS	ROLE	TRAINTS	VERSION	PODS	CPU	MEM	%CPU	%MEM	CPU/A	MEM/A	AGE
k3s-worker	Ready	<none>	0	v1.29.4+k3s1	13	145	2024	3	25	4000	7941	27d
kubernetes	Ready	control-plane,master	0	v1.29.4+k3s1	25	561	4044	7	25	8000	15991	28d

<node>

Deployments(monitored) [7]			
NAME↑	READY	UP-TO-DATE	AVAILABLE AGE
prometheus-grafana	1/1	1	1 24d
prometheus-kube-prometheus-operator	1/1	1	1 24d
prometheus-kube-state-metrics	1/1	1	1 24d
simple-app	1/1	1	1 24d
soc	1/1	1	1 4d4h
tool	1/1	1	1 8d
trivy-operator	1/1	1	1 24d

<deployment>



SERVICES

- I services gestiscono il **networking**
- Divisi in **LoadBalancer** e **ClusterIP**
- External-IP** è legato alla NIC della VM, usando **MetalLB**

```
apiVersion: v1
kind: Service
metadata:
  creationTimestamp: null
  name: soc-svc
  namespace: monitoring
  annotations:
    metallb.universe.tf/allow-shared-ip: "scalable"
spec:
  ports:
    - port: 5000
      protocol: TCP
      targetPort: 5000
  selector:
    app: soc
  sessionAffinity: ClientIP
  sessionAffinityConfig:
    clientIP:
      timeoutSeconds: 10000
  type: LoadBalancer
status:
  loadBalancer: {}
```

Services(monitoring)[12]						
NAME↑	TYPE	CLUSTER-IP	EXTERNAL-IP	PORTS	AGE	
alertmanager-operated	ClusterIP					
prometheus-grafana	LoadBalancer	10.43.196.92	192.168.1.150	http-web:9093>0 tcp-mesh:9094>0 udp-mesh:9094>0/UDP	24d	
prometheus-kube-prometheus-alertmanager	ClusterIP	10.43.26.232		http-web:3000-32323	24d	
prometheus-kube-prometheus-operator	ClusterIP	10.43.61.234		http-web:9093>0 reloader-web:8080>0	24d	
prometheus-kube-prometheus-prometheus	ClusterIP	10.43.142.161		https:443>0	24d	
prometheus-kube-state-metrics	ClusterIP	10.43.22.20		http-web:9090>0 reloader-web:8080>0	24d	
prometheus-operated	ClusterIP			http:8080>0	24d	
prometheus-prometheus-node-exporter	ClusterIP	10.43.90.200		http-web:9090>0	24d	
simple-app	LoadBalancer	10.43.63.40	192.168.1.150	http-metrics:9100>0	24d	
soc-svc	LoadBalancer	10.43.84.210	192.168.1.150	5001>32746	13d	
tool-svc	ClusterIP	10.43.92.154		5000>32529	8d	
trivy-operator	ClusterIP			5001>0	24d	
				metrics:80>0		

<service>



SCALABILITY: HPA



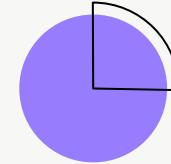
- **Horizontal Pod Autoscaler** impostato su tutti i deployment
- Permette di gestire il carico in maniera **dinamica**
- Ripristina il numero di **pod** una volta passato il picco di carico

Horizontalpodautoscalers (monitoring) [3]						
NAME	REFERENCE	TARGETS	MINPODS	MAXPODS	REPLICAS	AGE
simple-app	Deployment/simple-app	<unknown>/80%	1	100	0	8s
soc	Deployment/soc	8%/80%	1	100	1	13d
tool	Deployment/tool	<unknown>/80%	1	10	1	21s



VOLUME & STORAGE 1/2

- Vengono definiti dei **Persistent Volume** come pool di storage
- Tramite i **Persistent Volume Claim** i pod si legano ai PV
- La capacity dei volumi è definibile a runtime
- Su **AWS** è definito l'**autoscaling** dei volumi



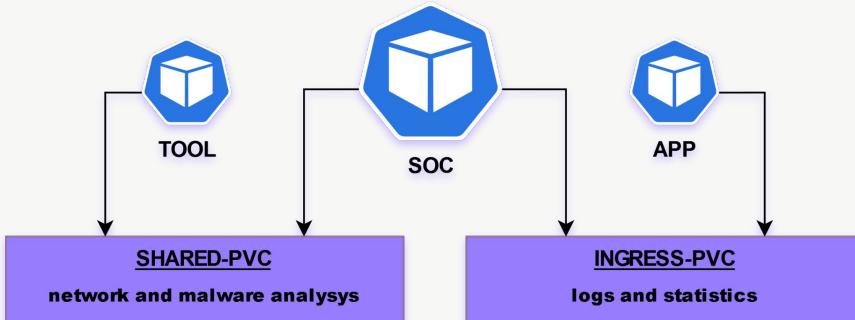
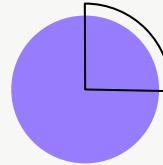
Persistentvolumeclaims (monitoring) [2]						
NAME	STATUS	VOLUME	CAPACITY	ACCESS MODES	STORAGECLASS	AGE
ingress-pvc	Bound	pvc-00634e9f-28af-4954-ac1-1b41448b0016	200Mi	RWO	local-path	25d
shared-pvc	Bound	shared-pv	1Gi	RWO	local-path	15d

NAME	PROVISIONER	RECLAIMPOLICY	VOLUMEBINDINGMODE	ALLOWVOLUMEEXPANSION	AGE
gp2 (default)	kubernetes.io/aws-ebs	Delete	WaitForFirstConsumer	false	82m
gp3 (default)	ebs.csi.aws.com	Retain	WaitForFirstConsumer	true	6m5s

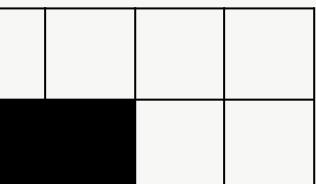
NAMESPACE	NAME	READY	UP-TO-DATE	AVAILABLE	AGE
kube-system	coredns	2/2	2	2	79m
kube-system	ebs-csi-controller	2/2	2	2	77m
monitoring	prometheus-grafana	1/1	1	1	54m
monitoring	prometheus-kube-prometheus-operator	1/1	1	1	54m
monitoring	prometheus-kube-state-metrics	1/1	1	1	54m
monitoring	simple-app	1/1	1	1	40m
monitoring	soc	1/1	1	1	47m
monitoring	tool	1/1	1	1	46m
monitoring	trivy-operator	1/1	1	1	52m
monitoring	volume-autoscaler	1/1	1	1	9s

VOLUME & STORAGE 2/2

- Il **SOC** fa il mount (centralizza) tutti i volumi
- **Segregazione dei volumi** per questioni di sicurezza
- Richiesta dei dati on demand e non passando via rete

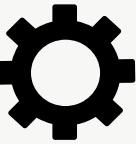


```
containers:
  - image: nginx
    name: nginx
    ...
  - name: goaccess
    command:
      command: [ "/bin/sh", "-c", "--" ]
      args: [ "while true; do goaccess /var/log/nginx/nginx-access.log
-o /var/log/nginx/result.html --log-format=COMBINED; done;" ]
    image: allinurl/goaccess
    imagePullPolicy: Always
  resources:
    requests:
      cpu: 200m
      memory: 32Mi
  terminationMessagePath: /dev/termination-log
  terminationMessagePolicy: File
  volumeMounts:
  - mountPath: /var/log/nginx
    name: nginx-ingress-pvc
```



KASM

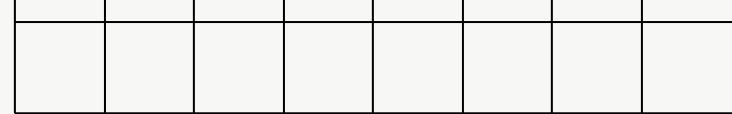
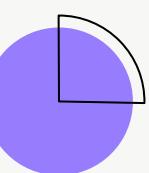
The screenshot shows the KASM web interface. On the left, there's a sidebar with navigation links: Dashboard, Home, Cluster, Security, Network Analyzer, Malware Analyzer, and Kasm (which is currently selected). Below these are Statistics sections for CoreDNS, Pods Workload - Master, and Pods Workload - Worker, along with links for volumes, Networking, Application Statistics, and Trivy. The main area features a dark background with a mountain landscape image. At the top center, there are WORKSPACES and ADMIN buttons, along with search and filter icons. A central modal window titled "Launch Windows" has a "Windows" icon and says "Open Session In". It has a dropdown menu set to "New Tab" and a blue "Launch Session" button at the bottom.



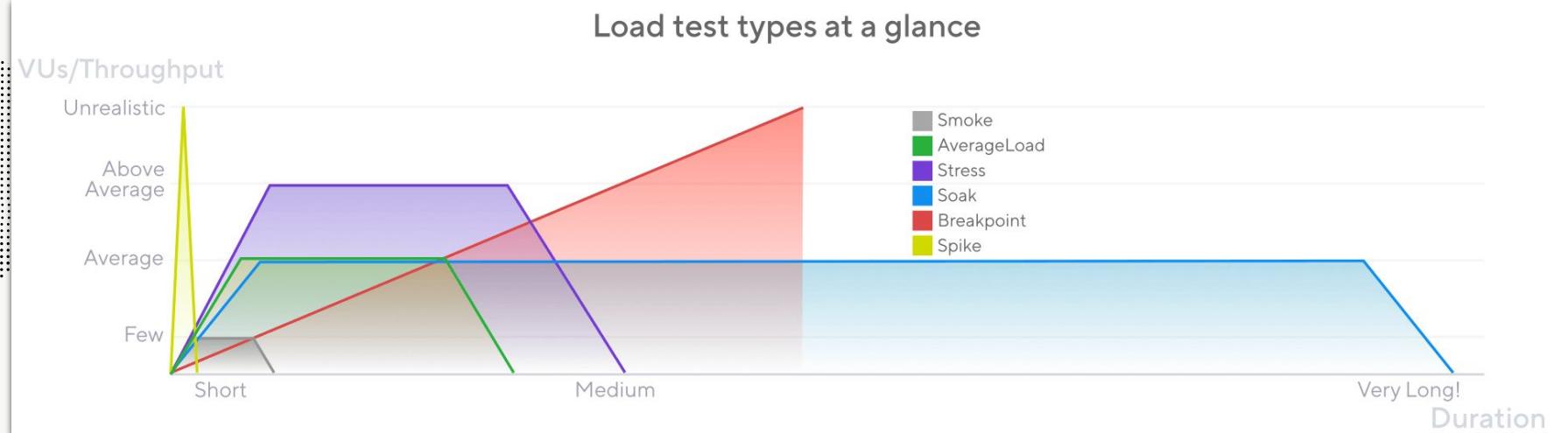
<https://soc-svc>



<https://kasm.soc-svc>



BENCHMARKS





SPIKE TEST

```
Context: default
Cluster: default
User: default
K9s Rev: v0.32.4
K8s Rev: v1.29.4+k3s1
CPU: 15%
MEM: 34%
```

```
<0> all
<1> deception
<2> default
```



Horizontalpodautoscalers(all)[1]

NAMESPACE↑	NAME	REFERENCE	TARGETS	MINPODS	MAXPODS	REPLICAS	AGE
monitoring	soc	Deployment/soc	84%/80%	1	100	15	24m

<horizontalpodautoscaler>

```
stages: [
  { duration: '2m', target: 2000 }, // fast ramp-up to a high point
  { duration: '1m', target: 0 }, // quick ramp-down to 0 users
]
```





STRESS TEST

```
Context: default
Cluster: default
User: default
K9s Rev: v0.32.4
K8s Rev: v1.29.4+k3s1
CPU: 5%
MEM: 32%
```

```
<0> all      <ctrl-d> Delete
<1> deception <d>   Describe
<2> default    <e>   Edit
<?>            <h>   Help
<y>            YAML
```



Horizontalpodautoscalers(all)[1]

NAMESPACE↑	NAME	REFERENCE	TARGETS	MINPODS	MAXPODS	REPLICAS	AGE
monitoring	soc	Deployment/soc	8%/80%	1	100	11	3h40m

```
<horizontalpodautoscaler>
```

```
stages: [
  { duration: '10m', target: 200 }, // traffic ramp-up from 1 to a higher 200 users over 10 minutes.
  { duration: '30m', target: 200 }, // stay at higher 200 users for 30 minutes
  { duration: '5m', target: 0 }, // ramp-down to 0 users
],
```





BREAKPOINT TEST

```
Context: default
Cluster: default
User: default
K9s Rev: v0.32.4
K8s Rev: v1.29.4+k3s1
CPU: 15%
MEM: 42%
```

```
<0> all
<1> deception
<2> default
```



```
Horizontalpodautoscalers(all)[1]
```

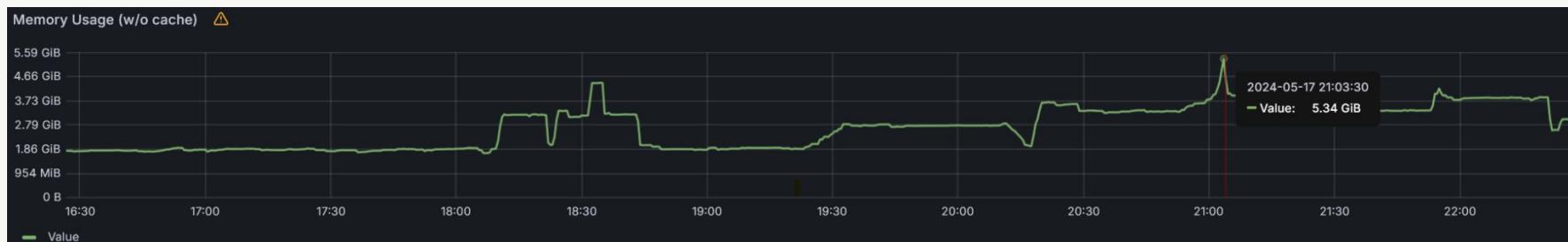
NAMESPACE↑	NAME	REFERENCE	TARGETS	MINPODS	MAXPODS	REPLICAS	AGE
monitoring	soc	Deployment/soc	75%/80%	1	100	17	155m

```
<horizontalpodautoscaler>
```

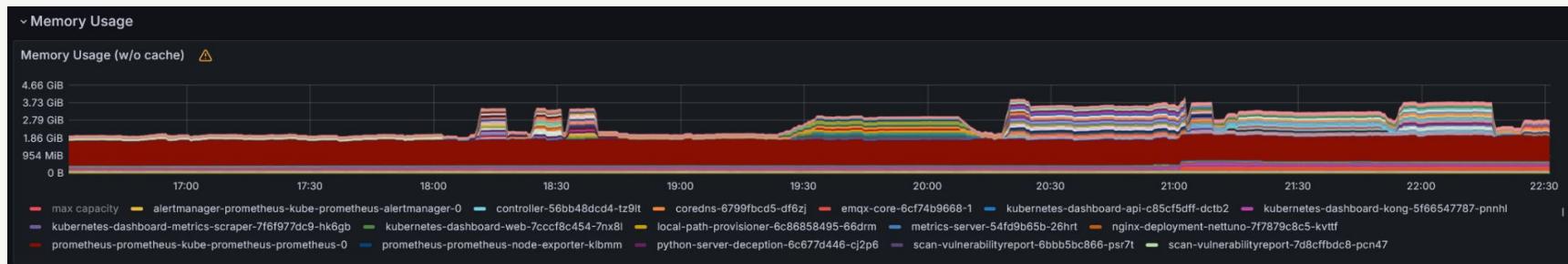
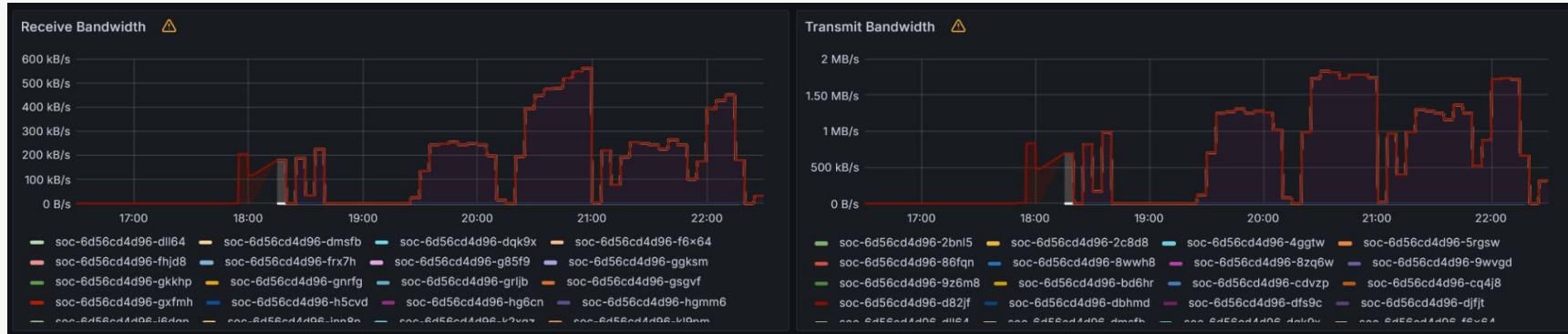
```
stages: [
  { duration: '2h', target: 20000 }, // just slowly ramp-up to a HUGE load
]
```



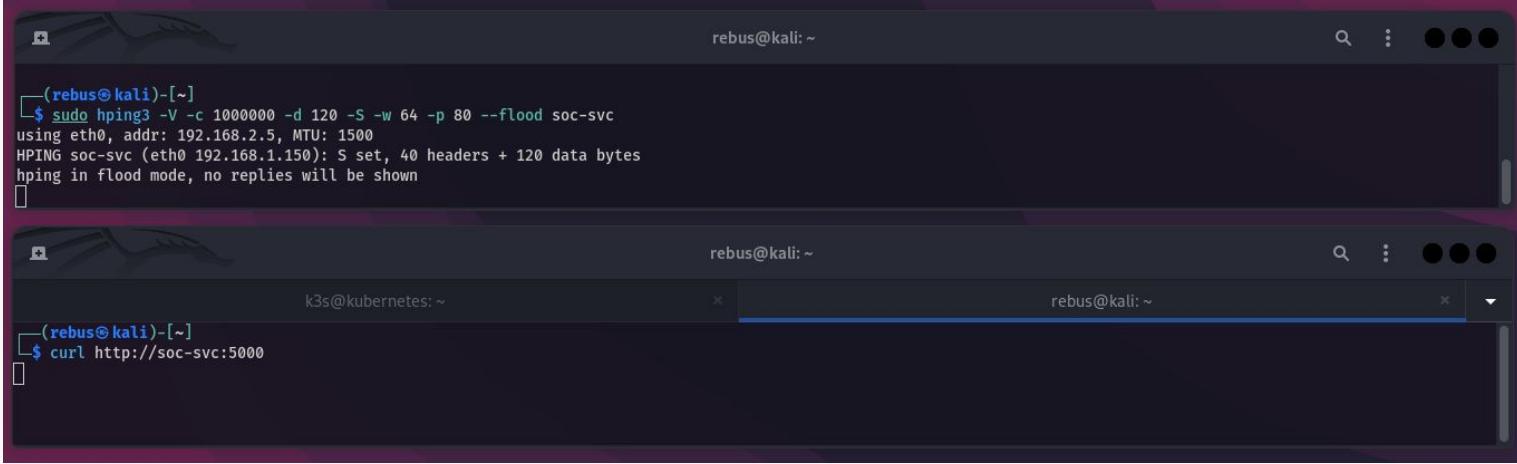
RESOURCES: CPU & MEMORY



RESOURCES: NETWORK & PODS



ATTACKS: DoS

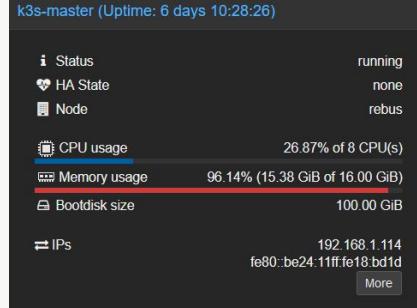
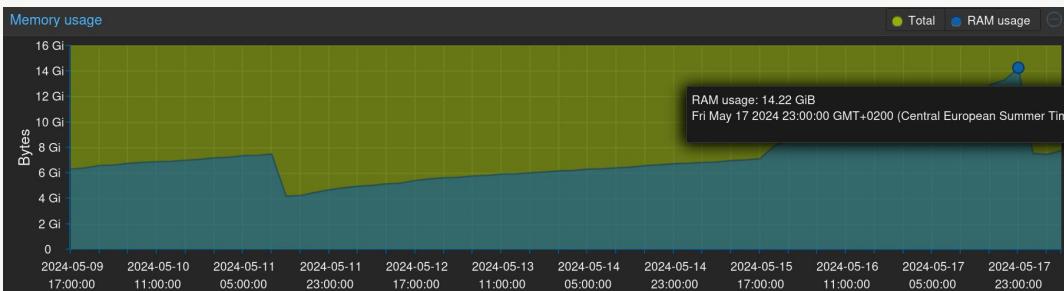


rebus@kali: ~

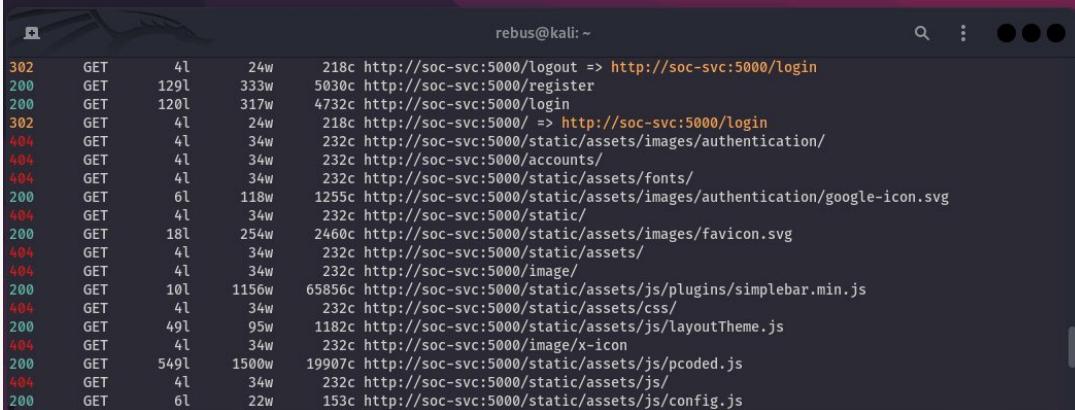
```
(rebus㉿kali)-[~]
$ sudo hping3 -V -c 1000000 -d 120 -S -w 64 -p 80 --flood soc-svc
using eth0, addr: 192.168.2.5, MTU: 1500
HPING soc-svc (eth0 192.168.1.150): S set, 40 headers + 120 data bytes
hping in flood mode, no replies will be shown
```

rebus@kali: ~

```
(rebus㉿kali)-[~]
$ curl http://soc-svc:5000
```

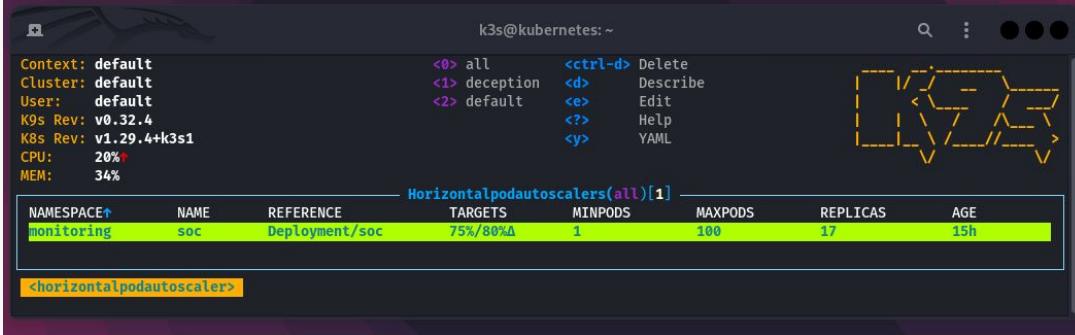


ATTACKS: Path Traversal



rebus@kali: ~

```
302 GET 4l 24w 218c http://soc-svc:5000/logout => http://soc-svc:5000/login
200 GET 129l 333w 5030c http://soc-svc:5000/register
200 GET 120l 317w 4732c http://soc-svc:5000/login
302 GET 4l 24w 218c http://soc-svc:5000/ => http://soc-svc:5000/login
404 GET 4l 34w 232c http://soc-svc:5000/static/assets/images/authentication/
404 GET 4l 34w 232c http://soc-svc:5000/accounts/
404 GET 4l 34w 232c http://soc-svc:5000/static/assets/fonts/
200 GET 6l 118w 1255c http://soc-svc:5000/static/assets/images/authentication/google-icon.svg
404 GET 4l 34w 232c http://soc-svc:5000/static/
200 GET 18l 254w 2460c http://soc-svc:5000/static/assets/images/favicon.svg
404 GET 4l 34w 232c http://soc-svc:5000/static/assets/
404 GET 4l 34w 232c http://soc-svc:5000/image/
200 GET 10l 1156w 65856c http://soc-svc:5000/static/assets/js/plugins/simplebar.min.js
404 GET 4l 34w 232c http://soc-svc:5000/static/assets/css/
200 GET 49l 95w 1182c http://soc-svc:5000/static/assets/js/layoutTheme.js
404 GET 4l 34w 232c http://soc-svc:5000/image/x-icon
200 GET 549l 1500w 19907c http://soc-svc:5000/static/assets/js/pcoded.js
404 GET 4l 34w 232c http://soc-svc:5000/static/assets/js/
200 GET 6l 22w 153c http://soc-svc:5000/static/assets/js/config.js
```

k3s@kubernetes: ~

```
Context: default          <0> all      <ctrl-d> Delete
Cluster: default          <1> deception <d> Describe
User: default              <2> default   <e> Edit
K9s Rev: v0.32.4           <?> Help
K8s Rev: v1.29.4+k3s1     <y> YAML
CPU: 20%*
MEM: 34%*
```

Horizontalpodautoscalers(all)[1]

NAMESPACE	NAME	REFERENCE	TARGETS	MINPODS	MAXPODS	REPLICAS	AGE
monitoring	soc	Deployment/soc	75%/80%	1	100	17	15h

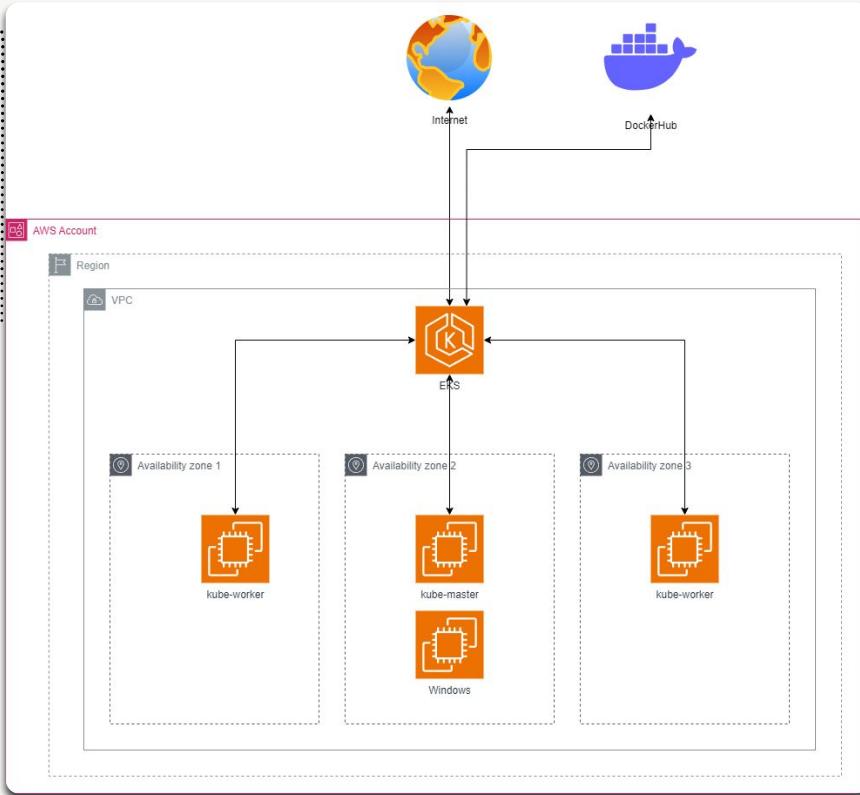
<horizontalpodautoscaler>

Risultati:

- Limite di 17 Pods per MS
- 1 Nodo con **16 GB Ram**,
CPU 12 core **3.7 GHz**
- NIC **1 Gb/s**

requests:
memory: "64Mi"
cpu: "100m"

DISEGNO ARCHITETTURALE (AWS)



AUTOSCALING: NODI

EKS offre lo scaling orizzontale dei nodi master e worker

Autoscaling basato su metriche (es: CPU media utilizzata)

Nodi aggiunti o rimossi quando si supera una certa soglia di una certa metrica

Definizione di **minimi e massimi** desiderati

Efficienza economica grazie agli sprechi limitati



EKS > Clusters

Clusters (1) [Info](#)

Filter clusters

Cluster name	Status	Kubernetes version	Support period	Provider
eks-uX1OnQMw	Active	1.27 Upgrade now	⚠ Standard support until July 24, 2024	EKS

AUTOSCALING: NODI

Auto Scaling groups (2) Info								
<input type="checkbox"/>	Name	Launch template/configuration	Instances	Status	Desired capacity	Min	Max	Availability Zones
Create Auto Scaling group								
<input type="checkbox"/>	eks-node-group-1-20240525135140734800000019-90c7d802-be79-bed9-02ad-5a929ce5a929ce1ce7e	eks-90c7d802-be79-bed9-02ad-5a929ce	2	-	2	1	3	eu-central-1a, eu-central-1c, eu-central-1b
<input type="checkbox"/>	eks-node-group-2-2024052513514073600000001b-1cc7d802-be79-4fa4-3e67-80c1c863	eks-1cc7d802-be79-4fa4-3e67-80c1c863	1	-	1	1	2	eu-central-1a, eu-central-1c, eu-central-1b

AUTOSCALING: VOLUMI

EBS come fonte di storage per Kubernetes

Driver CSI per connettere Kubernetes a EBS

Scaling automatico quando si raggiunge una certa quantità di spazio utilizzato

NAME	PROVISIONER	RECLAIMPOLICY	VOLUMEBINDINGMODE	ALLOWVOLUMEEXPANSION	AGE
gp2 (default)	kubernetes.io/aws-ebs	Delete	WaitForFirstConsumer	false	82m
gp3 (default)	ebs.csi.aws.com	Retain	WaitForFirstConsumer	true	6m5s

NAMESPACE	NAME	READY	UP-TO-DATE	AVAILABLE	AGE
kube-system	coredns	2/2	2	2	79m
kube-system	ebs-csi-controller	2/2	2	2	77m
monitoring	prometheus-grafana	1/1	1	1	54m
monitoring	prometheus-kube-prometheus-operator	1/1	1	1	54m
monitoring	prometheus-kube-state-metrics	1/1	1	1	54m
monitoring	simple-app	1/1	1	1	40m
monitoring	soc	1/1	1	1	47m
monitoring	tool	1/1	1	1	46m
monitoring	trivy-operator	1/1	1	1	52m
monitoring	volume-autoscaler	1/1	1	1	9s

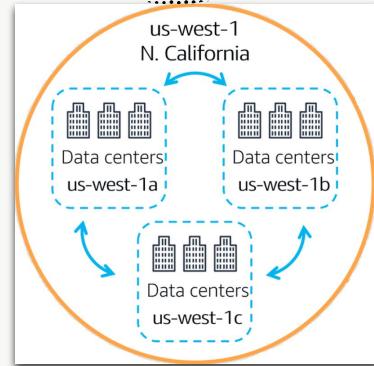
Volumes (3/3) Info						
<input type="text"/> Search						
<input checked="" type="checkbox"/> Name		<input checked="" type="checkbox"/> Volume ID		Type	Size	IOPS
<input checked="" type="checkbox"/>	node-group-1	vol-0092d53396e6c7a89	gp2	20 GiB	100	
<input checked="" type="checkbox"/>	node-group-2	vol-0a7bcb5a59c9a641b	gp2	20 GiB	100	
<input checked="" type="checkbox"/>	node-group-1	vol-04b020f5ba32bd209	gp2	20 GiB	100	

ALTA AFFIDABILITÀ: NODI

Separazione dei nodi in più **Availability Zones**

Availability Zone e Region: fault domain diversi

Separazione su più regioni non possibile con EKS



Instances (5) Info												
Connect Instance state Actions Launch instances												
<input type="text"/> Find Instance by attribute or tag (case-sensitive) All states												
	Name	Instance ID	Instance state	Instance type	Status check	Alarm status	Availability Zone	Public IPv4 DNS	Public IPv4 ...	Elastic IP		
<input type="checkbox"/>	node-group-1	I-07b2d44d4dd82995c	Running Q Q	t3.small	2/2 checks passed View alarms +	View alarms +	eu-central-1c	-	-	-		
<input type="checkbox"/>	ubuntu	I-04b8d5a44c302a9b8	Running Q Q	t2.micro	2/2 checks passed View alarms +	View alarms +	eu-central-1a	-	-	-		
<input type="checkbox"/>	windows	I-0f65f2fe494a5aea1	Running Q Q	t2.micro	2/2 checks passed View alarms +	View alarms +	eu-central-1a	-	-	-		
<input type="checkbox"/>	node-group-1	I-08c6aadcc6828b574	Running Q Q	t3.small	2/2 checks passed View alarms +	View alarms +	eu-central-1b	-	-	-		
<input type="checkbox"/>	node-group-2	I-0c3f93ed70e743ac0	Running Q Q	t3.small	2/2 checks passed View alarms +	View alarms +	eu-central-1a	-	-	-		

ALTA AFFIDABILITÀ: RETE

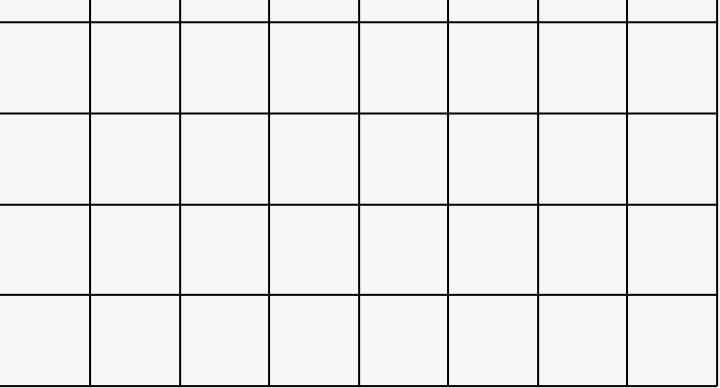
Subnets (6) Info					
<input type="text"/> Find resources by attribute or tag					
<input type="checkbox"/>	Name	Subnet ID	State	VPC	IPv4 CIDR
<input type="checkbox"/>	eks-srs-vpc-private-eu-central-1a	subnet-0247f63d109338542	✓ Available	vpc-047b7d8cb3ab51a2c eks-...	10.8.1.0/24
<input type="checkbox"/>	eks-srs-vpc-public-eu-central-1a	subnet-0eb509617973ac135	✓ Available	vpc-047b7d8cb3ab51a2c eks-...	10.8.4.0/24
<input type="checkbox"/>	eks-srs-vpc-private-eu-central-1b	subnet-07a43e4db2b2b3d1c	✓ Available	vpc-047b7d8cb3ab51a2c eks-...	10.8.2.0/24
<input type="checkbox"/>	eks-srs-vpc-public-eu-central-1b	subnet-0ffb5b992f877f2a8	✓ Available	vpc-047b7d8cb3ab51a2c eks-...	10.8.5.0/24
<input type="checkbox"/>	eks-srs-vpc-public-eu-central-1c	subnet-08dab65a7558fffd3	✓ Available	vpc-047b7d8cb3ab51a2c eks-...	10.8.6.0/24
<input type="checkbox"/>	eks-srs-vpc-private-eu-central-1c	subnet-0cb10ee8285d45ae0	✓ Available	vpc-047b7d8cb3ab51a2c eks-...	10.8.3.0/24

MINISOC on AWS

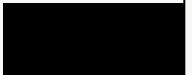
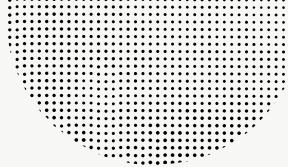
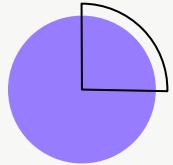
The screenshot shows a web browser window with the URL `ab4836cbe029d40c08d899261dbb8b97-1259281123.eu-central-1.elb.amazonaws.com:5000/index`. The interface has a dark theme with purple accents. On the left is a sidebar menu:

- Dashboard**
 - Home
 - Cluster
- Security**
 - Network Analyzer
 - Malware Analyzer
 - Kasm
- Statistics**
 - CoreDNS
 - Pods Workload - Master
 - Pods Workload - Worker
 - Volumes
 - Networking
 - Application Statistics
 - Trivy

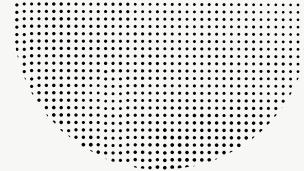
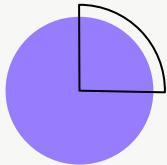
The main content area features a large, stylized "MiniSOC" logo in purple. At the bottom of the page, there is footer text: "© FlippaFioppa - Coded by BlessedRebuS, leonardobambini, RootLe00." and "The GNU General Public License v3.0".



DEMO



<https://github.com/FlippaFloppa/MINISOC>



GRAZIE PER L'ATTENZIONE



Bambini Leonardo
Leonelli Caterina
Di Fazio Patrick

