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Plataformas II

GitHub code:

<https://github.com/santiagobarrazas/devopsworks-website>

DevOpsWorks Website Helm Chart

Overview

This repository contains a Helm chart for deploying the DevOpsWorks website—a static landing page showcasing services such as DevOps consulting, support, machine learning, and cybersecurity. The original chart was sourced from the `devops-works/helm-charts` repository. However, due to the absence of the expected Docker image (`devopsworks-website`), a custom implementation was necessary.

Project Structure

- `templates/`: Contains Kubernetes manifest templates for Deployment, Service, Ingress, etc.
- `values.yaml`: Defines default configuration values for the chart.
- `web/`: Holds the static website files (HTML, CSS, JS, images).
- `.helmignore`: Specifies files and directories to ignore during packaging.

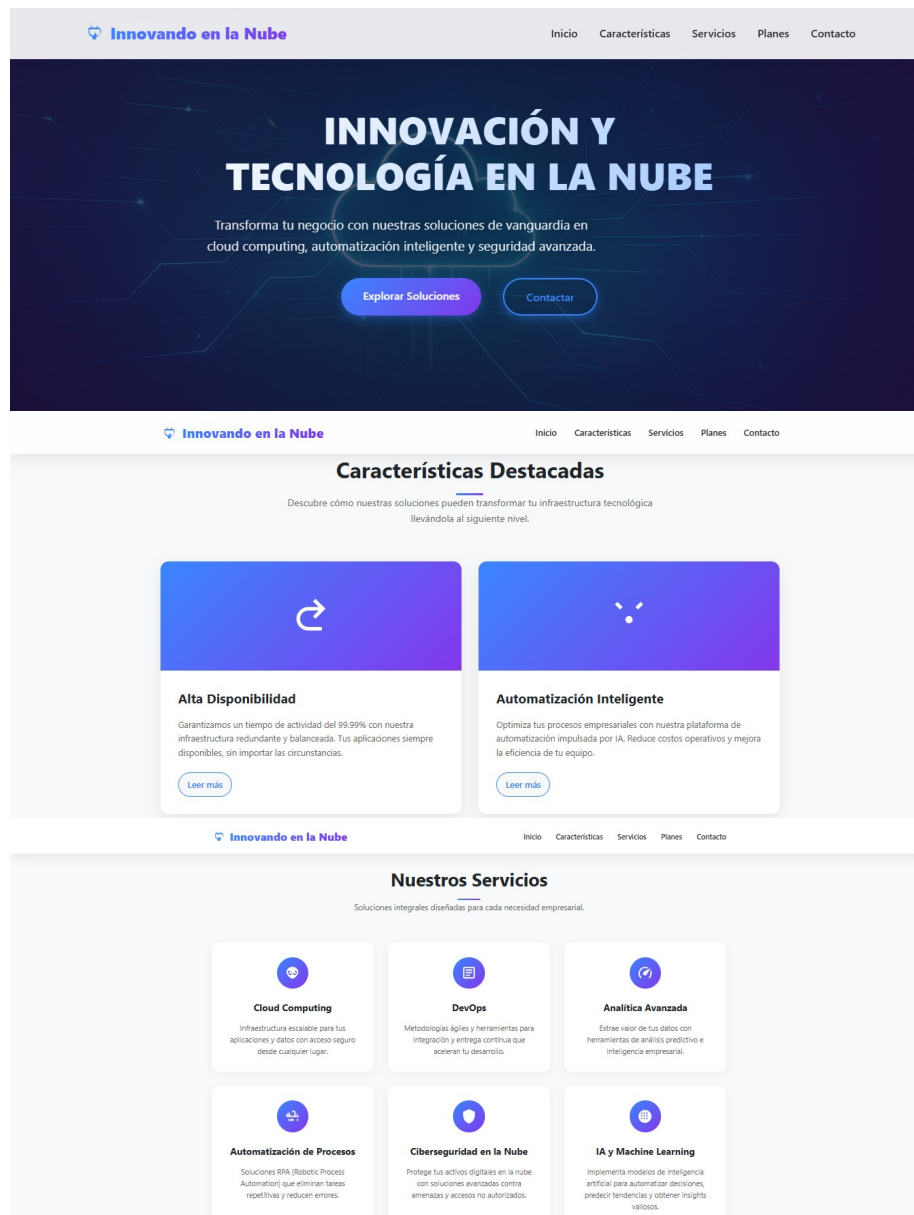
Implementation Details

1. Initial Setup

The contents of the `devopsworks-website` chart were copied into this repository to serve as the foundation for customization and deployment.

2. Static Website Creation

A static website was developed and placed within the `web/` directory. This site serves as the landing page for DevOpsWorks, detailing various services offered. The decision to create a custom site stemmed from the unavailability of the original Docker image.



3. Dockerization

A Dockerfile was created to containerize the static website using Nginx:

```
FROM nginx:alpine
COPY index.html /usr/share/nginx/html/
COPY styles.css /usr/share/nginx/html/
```

```
COPY scripts.js /usr/share/nginx/html/
COPY img/ /usr/share/nginx/html/img/
EXPOSE 80
```

The image was built and pushed to Docker Hub under the repository sjbs0212/devops-website.

4. Helm Chart Adjustments

a. .helmignore Update To prevent the `web/` directory from being packaged with the chart (due to size constraints), it was added to `.helmignore`:

```
.idea/
*.tmproj
.vscode/
web/
```

b. values.yaml Modification The `image` section was updated to reference the newly built Docker image:

```
image:
  repository: sjbs0212/devops-website
  pullPolicy: IfNotPresent
  tag: "v1"
```

5. Ingress Configuration

a. ingress.yaml Template Update The Ingress template was modified to correctly utilize the `path` and `pathType` values:

```
http:
  paths:
    {{- range .paths }}
    - path: {{ .path }}
      pathType: {{ .pathType }}
    {{- end }}
```

b. values.yaml Ingress Settings Ingress was enabled and configured to route traffic to the service:

```
ingress:
  enabled: true
  annotations:
    kubernetes.io/ingress.class: "nginx"
  hosts:
    - host: "localhost"
      paths:
        - path: /
```

```
      pathType: Prefix
    tls: []
```

6. Liveness Probe Adjustment

The liveness probe in `deployment.yaml` was updated to reflect the root path of the static site:

```
livenessProbe:
  httpGet:
    path: /
    port: http
```

This change ensures Kubernetes can accurately assess the health of the Nginx container serving the static content.

Deployment Instructions

To deploy the DevOpsWorks website using this Helm chart:

1. Add the Helm repository (if applicable) or use the local chart.
2. Install the chart:

```
helm install devopsworks-website ./path-to-chart
```

3. Ensure that the Ingress controller is set up and configured to handle the specified host (`localhost` in this case).

Conclusion

This customized Helm chart facilitates the deployment of a static DevOpsWorks landing page using Nginx. Adjustments were made to accommodate the absence of the original Docker image, including the creation of a custom static site, Dockerization, and necessary Helm chart modifications to ensure seamless deployment and operation within a Kubernetes environment.