

- 오픈소스 Helm 차트 분석 - tomcat

Helm Chart

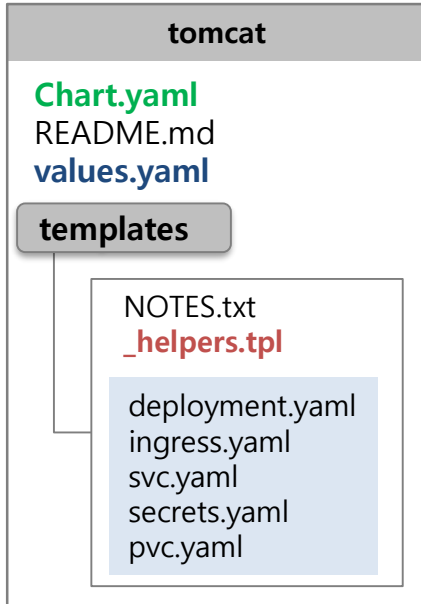


Chart.yaml

```

annotations:
  category: ApplicationServer
apiVersion: v2
appVersion: 9.0.41
description: Chart for Apache Tomcat
home: https://github.../tomcat
icon: https://bitnami.../tomcat-stack-110x117.png
keywords:
  - tomcat
  - java
  - http
  - web
  - application server
  - jsp
maintainers:
  - email: containers@bitnami.com
    name: Bitnami
name: tomcat
sources:
  - https://github.com/bitnami/bitnami-docker-tomcat
  - http://tomcat.apache...
version: 7.1.2
    
```

.Chart.version

values.yaml

```

# global:
# imageRegistry: m
# imagePullSecrets
# - myRegistryKe
# storageClass: my

image:
  registry: docker.io
  repository: bitnami
  tag: 9.0.41-debian-
  pullPolicy: IfNotPre
# pullSecrets:
# - myRegistryKe

updateStrategy: Rolling
tomcatUsername: user
# tomcatPassword:
tomcatAllowRemoteMa
podAnnotations: {}
podLabels: {}
affinity: {}
nodeSelector: {}
tolerations: []
securityContext:
  enabled: true
  fsGroup: 1001
  runAsUser: 1001

replicaCount: 1

resources:
  # memory: 1Gi
  requests:
    cpu: 300m
    memory: 512Mi
  persistence:
    enabled: true
    # storageClass: "-"
    annotations:
      accessModes:
        - ReadWriteOnce
    size: 8Gi
    existingClaim:

service:
  type: LoadBalancer
  port: 80
  nodePort: ""
  # loadBalancerIP:
  annotations: {}
  externalTrafficPolicy: C

ingress:
  enabled: false
  certManager: false
  annotations:
    # kubernetes.io/ingress.class: nginx
  hosts:
    - name: tomcat.local
      path: /
      tls: false
      # tlsHosts:
      # - www.tomcat.local
      # - tomcat.local
      tlsSecret: tomcat.local-tls

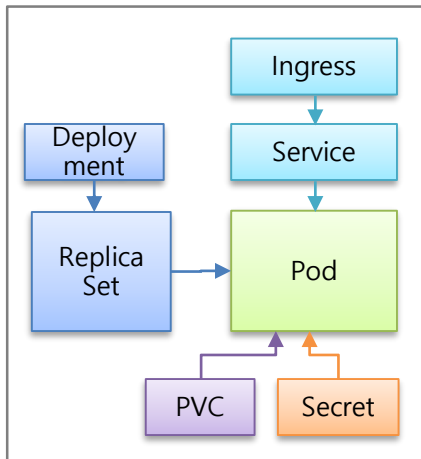
extraEnvVars: []

livenessProbe:
  enabled: true
  path: "/"
  port: http
  initialDelaySeconds: 120
  periodSeconds: 10
  failureThreshold: 6
  timeoutSeconds: 5
readinessProbe:
  enabled: true
  path: "/"
  port: http
  initialDelaySeconds: 30
  periodSeconds: 51
  failureThreshold: 3
  timeoutSeconds: 3

commonLabels: {}
    
```

.Values.replicaConunt

Kubernetes Cluster



_helpers.tpl [helm template mytomcat .]

```

{- define "tomcat.name" -}
  {{- default .Chart.Name .Values.nameOverride | trunc
    63 | trimSuffix "-" -}}
  {{- end -}}
  {{- define "tomcat.chart" -}}
    {{- printf "%s-%s" .Chart.Name
      "+" "_" | trunc 63 | trimSuffix "-" -}}
    {{- end -}}
  {{- define "tomcat.pvc" -}}
    {{- coalesce .Values.persistence
      "tomcat.fullname" . -}}
    {{- end -}}
  include "tomcat.name"
  name: tomcat
  chart: tomcat-7.1.2
  pvc: mytomcat
    
```

- 오픈소스 Helm 차트 분석 - tomcat

values.yaml

```
include : "value2"
```

_helper.tpl

```
{{- define "mychart.include" -}}  
key: {{ .key1 }}  
dict: {{ get . "key1" }}  
{{- end }}
```

```
typels1 : "text"  
typels2 : true
```

```
defaultLevel : info  
dev:  
  env: dev  
  log: "{{ .Values.defaultLevel }}"  
qa:  
  env: qa  
  log: "{{ .Values.defaultLevel }}"
```

```
data1 :  
data2 :  
data3 : "text3"
```

templates (yaml)

```
<dict>  
{{- $myDict := dict "key1" "value1" }}  
dict: {{ get $myDict "key1" }}  
→ "value1"
```

```
<include>  
include1: {{- include "mychart.include" (dict "key1" "value1") | indent 4 }}  
include2: {{- include "mychart.include" (dict "key1" .Values.include) | indent 4 }}  
→ key: value1  
dict: value1  
→ key: value2  
dict: value2
```

```
<typels>  
{{- if typels "string" .Values.typels1 }}  
typels1: {{ .Values.typels1 }}  
→ "text"  
{{- end }}  
  
{{- if typels "bool" .Values.typels2 }}  
typels2: {{ .Values.typels2 }}  
→ true  
{{- end }}
```

```
<tpl>  
normal: "{{ .Values.dev.log }}"  
→ "{{ Values.defaultLevel }}"  
tpl: "{{ tpl .Values.dev.log . }}"  
→ "info"
```

```
<coalesce>  
coalesce1: {{ coalesce .Values.data1 .Values.data2 "text1" }}  
→ "text1"  
coalesce2: {{ coalesce .Values.data1 "text2" .Values.data3 }}  
→ "text2"
```

- 오픈소스 Helm 차트 분석 - tomcat (_helpers.tpl)

Chart.yaml

```
annotations:  
  category: ApplicationServer  
apiVersion: v2  
appVersion: 9.0.41  
...  
name: tomcat  
...  
version: 7.1.2
```

values.yaml

```
# nameOverride:  
# fullnameOverride:  
  
persistence:  
  enabled: true  
  # storageClass: "-"  
  annotations:  
  accessModes:  
    - ReadWriteOnce  
  size: 8Gi  
  existingClaim:  
  
commonLabels: {}
```

Release

```
[ helm template mytomcat . ]
```

```
{{- define "tomcat.name" -}}  
{{- default .Chart.Name .Values.nameOverride | trunc 63 | trimSuffix "-" -}}  
{{- end -}}
```

```
{{- define "tomcat.fullname" -}}  
{{- if .Values.fullnameOverride -}}  
{{- .Values.fullnameOverride | trunc 63 | trimSuffix "-" -}}  
{{- else -}}  
{{- $name := default .Chart.Name .Values.nameOverride -}}  
{{- if contains $name .Release.Name -}}  
{{- .Release.Name | trunc 63 | trimSuffix "-" -}}  
{{- else -}}  
{{- printf "%s-%s" .Release.Name $name | trunc 63 | trimSuffix "-" -}}  
{{- end -}}  
{{- end -}}  
{{- end -}}
```

```
{{- define "tomcat.chart" -}}  
{{- printf "%s-%s" .Chart.Name .Chart.Version | replace "+" "_" | trunc 63 |  
trimSuffix "-" -}}  
{{- end -}}
```

```
{{- define "tomcat.pvc" -}}  
{{- coalesce .Values.persistence.existingClaim (include "tomcat.fullname" .) -}}  
{{- end -}}
```

tomcat:

```
name: tomcat  
fullname: mytomcat  
chart: tomcat-7.1.2  
pvc: mytomcat  
labels:  
  app: tomcat  
  chart: tomcat-7.1.2  
  release: mytomcat  
  heritage: Helm  
matchLabels:  
  app: tomcat  
  release: mytomcat  
image: docker.io/bitnami/tomcat:9.0.41-  
debian-10-r0  
imagePullSecrets:  
volumePermissions:  
  image: docker.io/bitnami/minideb:buster  
storageClass:  
tplValue:
```

- 오픈소스 Helm 차트 분석 - tomcat (_helpers.tpl)

Chart.yaml

```
annotations:
  category: ApplicationServer
apiVersion: v2
appVersion: 9.0.41
...
name: tomcat
...
version: 7.1.2
```

values.yaml

```
# nameOverride:
# fullnameOverride:

persistence:
  enabled: true
  # storageClass: "-"
  annotations:
  accessModes:
    - ReadWriteOnce
  size: 8Gi
  existingClaim:

commonLabels: {}
```

Release

```
[ helm template mytomcat . ]
```

```
{{- define "tomcat.labels" -}}
app: {{ include "tomcat.name" . }}
chart: {{ include "tomcat.chart" . }}
release: {{ .Release.Name }}
heritage: {{ .Release.Service }}
{{- if .Values.commonLabels }}
{{ toYaml .Values.commonLabels }}
{{- end -}}
{{- end -}}
```

```
{{- define "tomcat.matchLabels" -}}
app: {{ include "tomcat.name" . }}
release: {{ .Release.Name }}
{{- end -}}
```

```
{{- define "tomcat.image" -}}
{{- $registryName := .Values.image.registry -}}
{{- $repositoryName := .Values.image.repository -}}
{{- $tag := .Values.image.tag | toString -}}
{{- if .Values.global }}
  {{- if .Values.global.imageRegistry }}
    {{- printf "%s/%s:%s" .Values.global.imageRegistry $repositoryName $tag -}}
  {{- else -}}
    {{- printf "%s/%s:%s" $registryName $repositoryName $tag -}}
  {{- end -}}
{{- else -}}
  {{- printf "%s/%s:%s" $registryName $repositoryName $tag -}}
{{- end -}}
{{- end -}}
```

values.yaml

```
# global:
# imageRegistry: myRegistryName
# imagePullSecrets:
#   - myRegistryKeySecretName
# storageClass: myStorageClass

image:
  registry: docker.io
  repository: bitnami/tomcat
  tag: 9.0.41-debian-10-r0
  pullPolicy: IfNotPresent
  # pullSecrets:
  #   - myRegistryKeySecretName
```

```
tomcat:
  name: tomcat
  fullname: mytomcat
  chart: tomcat-7.1.2
  pvc: mytomcat
  labels:
    app: tomcat
    chart: tomcat-7.1.2
    release: mytomcat
    heritage: Helm
  matchLabels:
    app: tomcat
    release: mytomcat
  image: docker.io/bitnami/tomcat:9.0.41-debian-10-r0
  imagePullSecrets:
  volumePermissions:
    image: docker.io/bitnami/minideb:buster
  storageClass:
  tplValue:
```

- 오픈소스 Helm 차트 분석 - tomcat (_helpers.tpl)

values.yaml

```
# global:
# imageRegistry: myRegistryName
# imagePullSecrets:
#   - myRegistryKeySecretName
# storageClass: myStorageClass

image:
  registry: docker.io
  repository: bitnami/tomcat
  tag: 9.0.41-debian-10-r0
  pullPolicy: IfNotPresent
  # pullSecrets:
  #   - myRegistryKeySecretName

volumePermissions:
  enabled: false
  image:
    registry: docker.io
    repository: bitnami/minideb
    tag: buster
    pullPolicy: Always
    # pullSecrets:
    #   - myRegistryKeySecretName

persistence:
  enabled: true
  # storageClass: "-"
  annotations:
  accessModes:
    - ReadWriteOnce
  size: 8Gi
  existingClaim:
```

```
{{- define "tomcat.imagePullSecrets" -}}
{{- if .Values.global }}
  (...)
{{- end -}}
{{- else if
or .Values.image.pullSecrets .Values.volumePermissions.image.pullSecrets }}
  (...)
{{- end -}}

{{- define "tomcat.volumePermissions.image" -}}
{{- $registryName := .Values.volumePermissions.image.registry -}}
{{- $repositoryName := .Values.volumePermissions.image.repository -}}
{{- $tag := .Values.volumePermissions.image.tag | toString -}}
{{- if .Values.global }}
  (...)
{{- else -}}
  {{- printf "%s/%s:%s" $registryName $repositoryName $tag -}}
{{- end -}}
{{- end -}}

{{- define "tomcat.storageClass" -}}
{{- if .Values.global -}}
  (...)
{{- else -}}
  {{- if .Values.persistence.storageClass -}}
    (...)
  {{- end -}}
{{- end -}}
{{- end -}}
```

```
tomcat:
  name: tomcat
  fullname: mytomcat
  chart: tomcat-7.1.2
  pvc: mytomcat
  labels:
    app: tomcat
    chart: tomcat-7.1.2
    release: mytomcat
    heritage: Helm
  matchLabels:
    app: tomcat
    release: mytomcat
  image: docker.io/bitnami/tomcat:9.0.41-
  debian-10-r0
  imagePullSecrets:
  volumePermissions:
    image: docker.io/bitnami/minideb:buster
  storageClass:
  tplValue:
```

```
{{- define "tomcat.tplValue" -}}
{{- if typels "string" .value }}
  {{- tpl .value .context }}
{{- else }}
  {{- tpl (.value | toYaml) .context }}
{{- end }}
{{- end -}}
```

- 오픈소스 Helm 차트 분석 - tomcat (deployment.yaml)

values.yaml

```
image:
  pullPolicy: IfNotPresent
updateStrategy: Rolling
Update
tomcatUsername: user
tomcatAllowRemoteManagement: 0
replicaCount: 1
# command: []
podAnnotations: {}
affinity: {}
nodeSelector: {}
```

```
nodeSelector:
  group: a-zone
```

```
userSelector:
  group: a-zone
nodeSelector:
  "{{.Values.userSelector}}"
```

```
persistence:
  enabled: true
extraEnvVars: []
livenessProbe:
  enabled: true
  path: "/"
  port: http
  initialDelaySeconds: 120
  periodSeconds: 10
  failureThreshold: 6
  timeoutSeconds: 5
```

deployment.yaml

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: {{ template "tomcat.fullname" . }}
  labels: {{- include "tomcat.labels" . | nindent 4 }}
spec:
  strategy:
    type: {{ .Values.updateStrategy }}
    {{- if (eq "Recreate" .Values.updateStrategy) }}
    rollingUpdate: null
    {{- end }}
  selector:
    matchLabels: {{- include "tomcat.matchLabels" . | nindent 6 }}
  replicas: {{ .Values.replicaCount }}
  template:
    metadata:
      labels: {{- include "tomcat.labels" . | nindent 8 }}
      {{- if .Values.podAnnotations }}
      annotations: {{- toYaml .Values.podAnnotations | nindent 8 }}
      {{- end }}
    spec:
      {{- include "tomcat.imagePullSecrets" . | indent 6 }}
      {{- if .Values.affinity }}
      affinity: {{- include "tomcat.tplValue" (dict "value" .Values.affinity "context" $)
        | nindent 8 }}
      {{- end }}
      {{- if .Values.nodeSelector }}
      nodeSelector: {{- include "tomcat.tplValue" (dict "value" .Values.nodeSelector | nindent 8 }}
        | nindent 8 }}
      {{- end }}
      {{- if .Values.tolerations }}
      tolerations: {{- include "tomcat.tplValue" (dict "value" .Values.tolerations "context" $) | nindent 8 }}
      {{- end }}
```

```
"value" : {group: a-zone}
"context" : $
```

```
"value" : ".Values.userSelector"
"context" : $
```

```
apiVersion: apps/v1
kind: Deployment
metadata:
  name: mytomcat
  labels:
    app: tomcat
    chart: tomcat-7.1.2
    release: mytomcat
    heritage: Helm
spec:
  strategy:
    type: RollingUpdate
  selector:
    matchLabels:
      app: tomcat
      release: mytomcat
  replicas: 1
  template:
    metadata:
      labels:
        app: tomcat
        chart: tomcat-7.1.2
        release: mytomcat
        heritage: Helm
    spec:
```

```
nodeSelector:
  group: a-zone
```

_helpers.tpl

```
tomcat.name
tomcat
tomcat.fullname
mytomcat
tomcat.chart
tomcat-7.1.2
tomcat.pvc
mytomcat
tomcat.labels
app: tomcat
chart: tomcat-7.1.2
release: mytomcat
heritage: Helm
tomcat.matchLabels
app: tomcat
release: mytomcat
tomcat.image
docker...tomcat:9.0.41-dei..
tomcat.imagePullSecrets

tomcat.volumePermissions.
image
docker/..minideb:buster...
tomcat.storageClass
```

```
{{- define "tomcat.tplValue" (dict "value" $value "context" $context) -}}
{{- if typens "string" .value -}}
  {{- tpl .value .context -}}
{{- else -}}
  {{- tpl (.Values.userSelector) $ -}}
{{- end -}}
{{- define "tomcat.tplValue" (dict "value" $value "context" $context) -}}
  {{- tpl {group: a-zone} | toYaml $ -}}
```

- 오픈소스 Helm 차트 분석 - tomcat (deployment.yaml)

values.yaml

```
image:
  pullPolicy: IfNotPresent
updateStrategy: Rolling
Update
tomcatUsername: user
tomcatAllowRemoteManagement: 0
replicaCount: 1
# command: []
podAnnotations: {}
affinity: {}
nodeSelector: {}
tolerations: []
securityContext:
  enabled: true
  fsGroup: 1001
  runAsUser: 1001
volumePermissions:
  enabled: false
persistence:
  enabled: true
extraEnvVars: []
livenessProbe:
  enabled: true
  path: "/"
  port: http
  initialDelaySeconds: 120
  periodSeconds: 10
  failureThreshold: 6
  timeoutSeconds: 5
```

deployment.yaml

```
{{- if .Values.securityContext.enabled }}
securityContext:
  fsGroup: {{ .Values.securityContext.fsGroup }}
  runAsUser: {{ .Values.securityContext.runAsUser }}
{{- end }}
{{- if and .Values.volumePermissions.enabled .Values.persistence.enabled }}
initContainers:
  - name: volume-permissions
    image: {{ template "tomcat.volumePermissions.image" . }}
    imagePullPolicy: {{ .Values.volumePermissions.image.pullPolicy | quote }}
    command:
      - /bin/bash
      - -ec
      - |
        chown -R {{ .Values.securityContext.runAsUser }}:{{ .Values.securityContext.fsGroup }} /bitnami/tomcat
    securityContext:
      runAsUser: 0
  {{- if .Values.volumePermissions.resources }}
  resources: {{- toYaml .Values.volumePermissions.resources | nindent 12 }}
  {{- end }}
  volumeMounts:
    - name: data
      mountPath: /bitnami/tomcat
{{- end }}
containers:
  - name: tomcat
    image: {{ template "tomcat.image" . }}
    imagePullPolicy: {{ .Values.image.pullPolicy | quote }}
    {{- if .Values.command }}
    command: {{- include "tomcat.tplValue" ( dict "value" .Values.command "context" $ ) | nindent 12 }}
    {{- end }}
```

```
securityContext:
  fsGroup: 1001
  runAsUser: 1001
containers:
  - name: tomcat
    image: docker.io/bitnami/tomcat:9.0.41-debian-10-r0
    imagePullPolicy: "IfNotPresent"
```

_helpers.tpl

```
tomcat.name
tomcat
tomcat.fullname
mytomcat
tomcat.chart
tomcat-7.1.2
tomcat.pvc
mytomcat
tomcat.labels
app: tomcat
chart: tomcat-7.1.2
release: mytomcat
heritage: Helm
tomcat.matchLabels
app: tomcat
release: mytomcat
tomcat.image
docker...tomcat:9.0.41-dei..
tomcat.imagePullSecrets

tomcat.volumePermissions.
image
docker/..minideb:buster...
tomcat.storageClass

tomcat.tplValue
```

- 오픈소스 Helm 차트 분석 - tomcat (deployment.yaml)

values.yaml

```
image:
  pullPolicy: IfNotPresent
updateStrategy: Rolling
Update
tomcatUsername: user
tomcatAllowRemoteManagement: 0
replicaCount: 1
# command: []
podAnnotations: {}
affinity: {}
nodeSelector: {}
tolerations: []
securityContext:
  enabled: true
  fsGroup: 1001
  runAsUser: 1001
volumePermissions:
  enabled: false
persistence:
  enabled: true
extraEnvVars: []
livenessProbe:
  enabled: true
  path: "/"
  port: http
  initialDelaySeconds: 120
  periodSeconds: 10
  failureThreshold: 6
  timeoutSeconds: 5
```

deployment.yaml

```
env:
  - name: TOMCAT_USERNAME
    value: {{ .Values.tomcatUsername | quote }}
  - name: TOMCAT_PASSWORD
    valueFrom:
      secretKeyRef:
        name: {{ template "tomcat.fullname" . }}
        key: tomcat-password
  - name: TOMCAT_ALLOW_REMOTE_MANAGEMENT
    value: {{ .Values.tomcatAllowRemoteManagement | quote }}
{{- if .Values.extraEnvVars }}
{{- include "tomcat.tplValue" (dict "value" .Values.extraEnvVars "context" $) | nindent 12 }}
{{- end }}
ports:
  - name: http
    containerPort: 8080
{{- if .Values.livenessProbe.enabled }}
livenessProbe:
  httpGet:
    path: {{ .Values.livenessProbe.path }}
    port: {{ .Values.livenessProbe.port }}
  initialDelaySeconds: {{ .Values.livenessProbe.initialDelaySeconds }}
  periodSeconds: {{ .Values.livenessProbe.periodSeconds }}
  failureThreshold: {{ .Values.livenessProbe.failureThreshold }}
  timeoutSeconds: {{ .Values.livenessProbe.timeoutSeconds }}
{{- end }}
```

```
env:
  - name: TOMCAT_USERNAME
    value: "user"
  - name: TOMCAT_PASSWORD
    valueFrom:
      secretKeyRef:
        name: mytomcat
        key: tomcat-password
  - name: TOMCAT_ALLOW_REMOTE_MANAGEMENT
    value: "0"
ports:
  - name: http
    containerPort: 8080
livenessProbe:
  httpGet:
    path: /
    port: http
  initialDelaySeconds: 120
  periodSeconds: 10
  failureThreshold: 6
  timeoutSeconds: 5
```

_helpers.tpl

```
tomcat.name
tomcat
tomcat.fullname
mytomcat
tomcat.chart
tomcat-7.1.2
tomcat.pvc
mytomcat
tomcat.labels
app: tomcat
chart: tomcat-7.1.2
release: mytomcat
heritage: Helm
tomcat.matchLabels
app: tomcat
release: mytomcat
tomcat.image
docker...tomcat:9.0.41-dei..
tomcat.imagePullSecrets

tomcat.volumePermissions.
image
docker/..minideb:buster...
tomcat.storageClass

tomcat.tplValue
```


- 오픈소스 Helm 차트 분석 - tomcat (deployment.yaml)

values.yaml

```
persistence:
  enabled: true

readinessProbe:
  enabled: true
  path: "/"
  port: http
  initialDelaySeconds: 30
  periodSeconds: 51
  failureThreshold: 3
  timeoutSeconds: 3

resources:
  limits: {}
  # cpu: 500m
  # memory: 1Gi
  requests:
    cpu: 300m
    memory: 512Mi
```

deployment.yaml

```
{{- if .Values.readinessProbe.enabled }}
readinessProbe:
  httpGet:
    path: {{ .Values.readinessProbe.path }}
    port: {{ .Values.readinessProbe.port }}
  initialDelaySeconds: {{ .Values.readinessProbe.initialDelaySeconds }}
  periodSeconds: {{ .Values.readinessProbe.periodSeconds }}
  failureThreshold: {{ .Values.readinessProbe.failureThreshold }}
  timeoutSeconds: {{ .Values.readinessProbe.timeoutSeconds }}
{{- end }}
{{- if .Values.resources }}
resources: {{- toYaml .Values.resources | nindent 12 }}

labels: {{- include "tomcat.labels" . | nindent 4 }}
  - name: data
    mountPath: /bitnami/tomcat

volumes:
  - name: data
    {{- if .Values.persistence.enabled }}
    persistentVolumeClaim:
      claimName: {{ template "tomcat.pvc" . }}
    {{- else }}
    emptyDir: {}
    {{- end -}}
```

```
readinessProbe:
  httpGet:
    path: /
    port: http
  initialDelaySeconds: 30
  periodSeconds: 51
  failureThreshold: 3
  timeoutSeconds: 3
resources:
  limits: {}
  requests:
    cpu: 300m
    memory: 512Mi
  volumeMounts:
    - name: data
      mountPath: /bitnami/tomcat
volumes:
  - name: data
    persistentVolumeClaim:
      claimName: mytomcat
```

_helpers.tpl

```
tomcat.name
tomcat
tomcat.fullname
mytomcat
tomcat.chart
tomcat-7.1.2
tomcat.pvc
mytomcat
tomcat.labels
app: tomcat
chart: tomcat-7.1.2
release: mytomcat
heritage: Helm
tomcat.matchLabels
app: tomcat
release: mytomcat
tomcat.image
docker...tomcat:9.0.41-dei..
tomcat.imagePullSecrets

tomcat.volumePermissions.
image
docker/..minideb:buster...
tomcat.storageClass

tomcat.tplValue
```