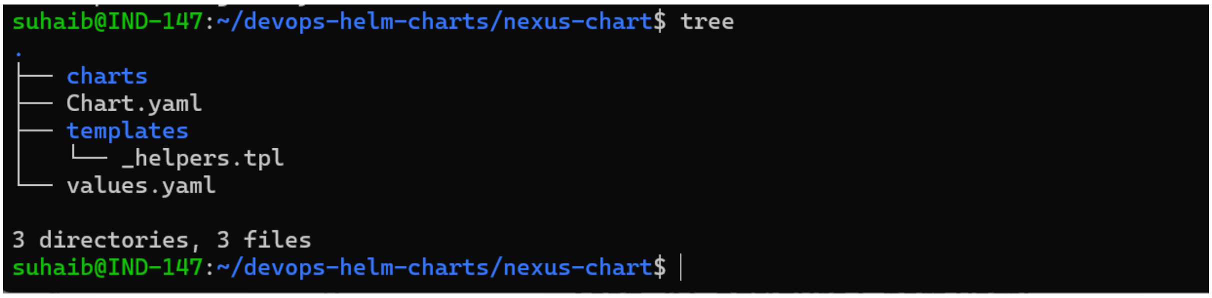
Nexus Helm Chart Deployment

Step 1: Create Nexus Helm Chart Structure

```
# Navigate to your charts directory
cd ~/devops-helm-charts

# Create Nexus Helm chart
helm create nexus-chart
cd nexus-chart

# Clean up default files
rm -rf templates/tests/
rm templates/NOTES.txt
rm templates/hpa.yaml
rm templates/deployment.yaml
rm templates/service.yaml
rm templates/serviceaccount.yaml
rm templates/ingress.yaml
```



```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ tree
.
├── charts
├── Chart.yaml
├── templates
│   └── _helpers.tpl
└── values.yaml

3 directories, 3 files
suhaib@IND-147:~/devops-helm-charts/nexus-chart$
```

Step 2: Configure Chart.yaml

```
# Chart.yaml - Updated
apiVersion: v2
name: nexus-chart
description: A Helm chart for Nexus Repository Manager with custom configuration
type: application
version: 0.2.0  # Increment version
```

```
appVersion: "3.68.1"  # Updated to secure version
keywords:
  - nexus
  - repository
  - artifacts
  - devops
home: https://www.sonatype.com/nexus/repository-oss
sources:
  - https://github.com/sonatype/nexus-public
maintainers:
  - name: DevOps Team
    email: devops@cprime.com
```

Step 3: Configure values.yaml

```
# values.yaml - Updated configuration
nexus:
  image:
    repository: sonatype/nexus3
    tag: "3.68.1"  # Updated to secure version
    pullPolicy: IfNotPresent

  # Add context path configuration
  contextPath: "/"

  # Resource configuration
  resources:
    requests:
      memory: "2Gi"
      cpu: "1000m"
    limits:
      memory: "4Gi"
      cpu: "2000m"

  # Service configuration
  service:
    type: ClusterIP
    port: 8081
    targetPort: 8081
    name: nexus-service

  # Persistence configuration
  persistence:
    enabled: true
    storageClass: "standard"
    size: "20Gi"
    accessMode: ReadWriteOnce

  # Security context
  securityContext:
    runAsUser: 997
    runAsGroup: 997
    fsGroup: 997

  # Nexus admin configuration - FIXED
  admin:
    username: "admin"
    randomPassword: true  # Changed to true to generate admin.password file

  # Environment variables - FIXED
  env:
    - name: NEXUS_SECURITY_RANDOMPASSWORD
      value: "true"  # Changed to true
    - name: NEXUS_JVM_HEAP_MIN
      value: "1024m"
    - name: NEXUS_JVM_HEAP_MAX
      value: "2048m"
    - name: NEXUS_CONTEXT_PATH
      value: "/"

# Database configuration (optional external DB)
database:
  external:
    enabled: false
    host: ""
    port: 5432
    name: "nexus"
    username: "nexus"
    password: ""

# Ingress configuration
ingress:
  enabled: true
  className: "nginx"
  annotations:
    nginx.ingress.kubernetes.io/rewrite-target: /
    nginx.ingress.kubernetes.io/ssl-redirect: "false"
    nginx.ingress.kubernetes.io/backend-protocol: "HTTP"
    nginx.ingress.kubernetes.io/proxy-body-size: "0"
    nginx.ingress.kubernetes.io/proxy-read-timeout: "300"
    nginx.ingress.kubernetes.io/proxy-send-timeout: "300"
  hosts:
    - host: nexus.local
      paths:
        - path: /
          pathType: Prefix
  tls:
    - secretName: nexus-tls
      hosts:
        - nexus.local

# Service Account
serviceAccount:
  create: true
  name: "nexus-sa"
  annotations: {}

# RBAC
rbac:
  create: true
  rules:
    - apiGroups: [""]
```

```
      resources: ["secrets", "configmaps"]
      verbs: ["get", "list", "watch"]
    - apiGroups: [""]
      resources: ["persistentvolumeclaims"]
      verbs: ["get", "list", "watch", "create", "update", "patch"]

# Node selector and tolerations
nodeSelector: {}
tolerations: []
affinity: {}
```

Step 4: Create Template Files

templates/configmap.yaml

```
apiVersion: v1
kind: ConfigMap
metadata:
  name: {{ include "nexus-chart.fullname" . }}-config
  labels:
    {{- include "nexus-chart.labels" . | nindent 4 }}
data:
  nexus.properties: |
    # Nexus configuration
    {{- $randomPassword := "false" }}
    {{- range .Values.nexus.env }}
    {{- if eq .name "NEXUS_SECURITY_RANDOMPASSWORD" }}
    {{- $randomPassword = .value }}
    {{- end }}
    {{- end }}
    nexus.security.randompassword={{ $randomPassword }}
    nexus.cleanup.retainDays=30
    nexus.scripts.allowCreation=true

    # Context path configuration - CRITICAL FIX
    nexus-context-path={{ .Values.nexus.contextPath | default "/" }}

    # Application port
    application-port={{ .Values.nexus.service.targetPort | default 8081 }}

    # Essential nexus-args configuration
    nexus-args=${jetty.etc}/jetty.xml,${jetty.etc}/jetty-http.xml,${jetty.etc}/jetty-requestlog.xml

  {{- if .Values.database.external.enabled }}
  database.properties: |
    nexus.datastore.enabled=true
    nexus.datastore.nexus.type=jdbc
    nexus.datastore.nexus.jdbcUrl=jdbc:postgresql://{{ .Values.database.external.host }}:{{ .Values.database.external.port }}/{{ .Values.database.external.name }}
    nexus.datastore.nexus.username={{ .Values.database.external.username }}
    nexus.datastore.nexus.password={{ .Values.database.external.password }}
  {{- end }}
```

templates/secret.yaml

```
apiVersion: v1
kind: Secret
metadata:
  name: {{ include "nexus-chart.fullname" . }}-secret
  labels:
    {{- include "nexus-chart.labels" . | nindent 4 }}
type: Opaque
data:
  nexus-admin-user: {{ .Values.nexus.admin.username | b64enc | quote }}
  {{- if .Values.nexus.admin.password }}
  nexus-admin-password: {{ .Values.nexus.admin.password | b64enc | quote }}
  {{- end }}
  {{- if .Values.database.external.enabled }}
  database-username: {{ .Values.database.external.username | b64enc | quote }}
  database-password: {{ .Values.database.external.password | b64enc | qu
ote }}
  {{- end }}
```

templates/pvc.yaml

```
{{- if .Values.nexus.persistence.enabled }}
apiVersion: v1
kind: PersistentVolumeClaim
metadata:
  name: {{ include "nexus-chart.fullname" . }}-pvc
  labels:
    {{- include "nexus-chart.labels" . | nindent 4 }}
spec:
  accessModes:
    - {{ .Values.nexus.persistence.accessMode }}
  resources:
    requests:
      storage: {{ .Values.nexus.persistence.size }}
  {{- if .Values.nexus.persistence.storageClass }}
  storageClassName: {{ .Values.nexus.persistence.storageClass }}
  {{- end }}
{{- end }}
```

templates/serviceaccount.yaml

```
{{- if .Values.serviceAccount.create }}
apiVersion: v1
kind: ServiceAccount
metadata:
  name: {{ include "nexus-chart.fullname" . }}-sa
  labels:
    {{- include "nexus-chart.labels" . | nindent 4 }}
  {{- with .Values.serviceAccount.annotations }}
  annotations:
    {{- toYaml . | nindent 4 }}
  {{- end }}
```

```
automountServiceAccountToken: true
{{- end }}
```

templates/rbac.yaml

```
{{- if .Values.rbac.create }}
apiVersion: rbac.authorization.k8s.io/v1
kind: ClusterRole
metadata:
  name: {{ include "nexus-chart.fullname" . }}-role
  labels:
    {{- include "nexus-chart.labels" . | nindent 4 }}
rules:
{{- with .Values.rbac.rules }}
{{- toYaml . | nindent 2 }}
{{- end }}
---
apiVersion: rbac.authorization.k8s.io/v1
kind: ClusterRoleBinding
metadata:
  name: {{ include "nexus-chart.fullname" . }}-rolebinding
  labels:
    {{- include "nexus-chart.labels" . | nindent 4 }}
roleRef:
  apiGroup: rbac.authorization.k8s.io
  kind: ClusterRole
  name: {{ include "nexus-chart.fullname" . }}-role
subjects:
- kind: ServiceAccount
  name: {{ include "nexus-chart.fullname" . }}-sa
  namespace: {{ .Release.Namespace }}
{{- end }}
```

templates/deployment.yaml

```
apiVersion: apps/v1
kind: Deployment
```

```
metadata:
  name: {{ include "nexus-chart.fullname" . }}
  labels:
    {{- include "nexus-chart.labels" . | nindent 4 }}
spec:
  replicas: 1
  selector:
    matchLabels:
      {{- include "nexus-chart.selectorLabels" . | nindent 6 }}
  template:
    metadata:
      labels:
        {{- include "nexus-chart.selectorLabels" . | nindent 8 }}
    spec:
      {{- if .Values.serviceAccount.create }}
      serviceAccountName: {{ include "nexus-chart.fullname" . }}-sa
      {{- end }}
      securityContext:
        runAsUser: {{ .Values.nexus.securityContext.runAsUser }}
        runAsGroup: {{ .Values.nexus.securityContext.runAsGroup }}
        fsGroup: {{ .Values.nexus.securityContext.fsGroup }}
      containers:
      - name: nexus
        image: "{{ .Values.nexus.image.repository }}:{{ .Values.nexus.image.tag }}"
        imagePullPolicy: {{ .Values.nexus.image.pullPolicy }}
        # Fixed startup command with proper nexus-args
        command: ["/opt/sonatype/nexus/bin/nexus"]
        args: ["run"]
        env:
        # Environment variables from values.yaml
        {{- range .Values.nexus.env }}
        - name: {{ .name }}
          value: {{ .value | quote }}
        {{- end }}
        # CRITICAL: Set context path environment variable
        - name: NEXUS_CONTEXT_PATH
          value: {{ .Values.nexus.contextPath | default "/" | quote }}
        # Critical: Set NEXUS_ARGS environment variable
        - name: NEXUS_ARGS
          value: "${jetty.etc}/jetty.xml,${jetty.etc}/jetty-http.xml,${jetty.etc}/jetty-requestlog.xml"
        - name: NEXUS_DATA
          value: "/nexus-data"
        - name: NEXUS_HOME
          value: "/opt/sonatype/nexus"
        ports:
        - containerPort: {{ .Values.nexus.service.targetPort }}
          name: http
        volumeMounts:
        - name: nexus-data
          mountPath: /nexus-data
        - name: nexus-config
          mountPath: /opt/sonatype/nexus/etc/nexus.properties
          subPath: nexus.properties
        {{- if .Values.database.external.enabled }}
        - name: nexus-config
          mountPath: /opt/sonatype/nexus/etc/fabric/nexus-store.properties
          subPath: database.properties
        {{- end }}
        livenessProbe:
          httpGet:
            path: {{ if ne (.Values.nexus.contextPath | default "/") "/" }}{{ .Values.nexus.contextPath }}{{ end }}/service/rest/v1/status
            port: http
          initialDelaySeconds: 300
          periodSeconds: 30
          timeoutSeconds: 10
          failureThreshold: 6
        readinessProbe:
          httpGet:
            path: {{ if ne (.Values.nexus.contextPath | default "/") "/" }}{{ .Values.nexus.contextPath }}{{ end }}/service/rest/v1/status
            port: http
          initialDelaySeconds: 180
          periodSeconds: 30
```

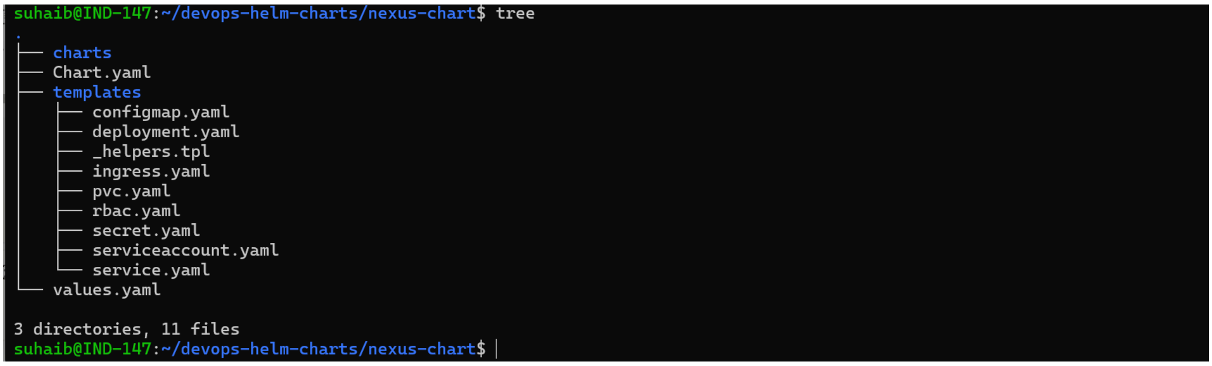
```
    timeoutSeconds: 10
    failureThreshold: 3
  resources:
    {{- toYaml .Values.nexus.resources | nindent 10 }}
volumes:
- name: nexus-config
  configMap:
    name: {{ include "nexus-chart.fullname" . }}-config
    items:
    - key: nexus.properties
      path: nexus.properties
    {{- if .Values.database.external.enabled }}
    - key: database.properties
      path: database.properties
    {{- end }}
{{- if .Values.nexus.persistence.enabled }}
- name: nexus-data
  persistentVolumeClaim:
    claimName: {{ include "nexus-chart.fullname" . }}-pvc
{{- else }}
- name: nexus-data
  emptyDir: {}
{{- end }}
{{- with .Values.nodeSelector }}
nodeSelector:
  {{- toYaml . | nindent 8 }}
{{- end }}
{{- with .Values.affinity }}
affinity:
  {{- toYaml . | nindent 8 }}
{{- end }}
{{- with .Values.tolerations }}
tolerations:
  {{- toYaml . | nindent 8 }}
{{- end }}
```

templates/service.yaml

```
apiVersion: v1
kind: Service
metadata:
  name: {{ include "nexus-chart.fullname" . }}-service
  labels:
    {{- include "nexus-chart.labels" . | nindent 4 }}
spec:
  type: {{ .Values.nexus.service.type }}
  ports:
  - port: {{ .Values.nexus.service.port }}
    targetPort: {{ .Values.nexus.service.targetPort }}
    protocol: TCP
    name: http
  selector:
    {{- include "nexus-chart.selectorLabels" . | nindent 4 }}
```

templates/ingress.yaml

```
{{- if .Values.ingress.enabled -}}
apiVersion: networking.k8s.io/v1
kind: Ingress
metadata:
  name: {{ include "nexus-chart.fullname" . }}-ingress
  labels:
    {{- include "nexus-chart.labels" . | nindent 4 }}
  {{- with .Values.ingress.annotations }}
  annotations:
    {{- toYaml . | nindent 4 }}
  {{- end }}
spec:
  {{- if .Values.ingress.className }}
  ingressClassName: {{ .Values.ingress.className }}
  {{- end }}
  {{- if .Values.ingress.tls }}
  tls:
    {{- range .Values.ingress.tls }}
    - hosts:
        {{- range .hosts }}
        - {{ . | quote }}
        {{- end }}
      secretName: {{ .secretName }}
    {{- end }}
  {{- end }}
  rules:
    {{- range .Values.ingress.hosts }}
    - host: {{ .host | quote }}
      http:
        paths:
          {{- range .paths }}
          - path: {{ .path }}
            pathType: {{ .pathType }}
            backend:
              service:
                name: {{ include "nexus-chart.fullname" $ }}-service
                port:
                  number: {{ $.Values.nexus.service.port }}
          {{- end }}
    {{- end }}
{{- end }}
```

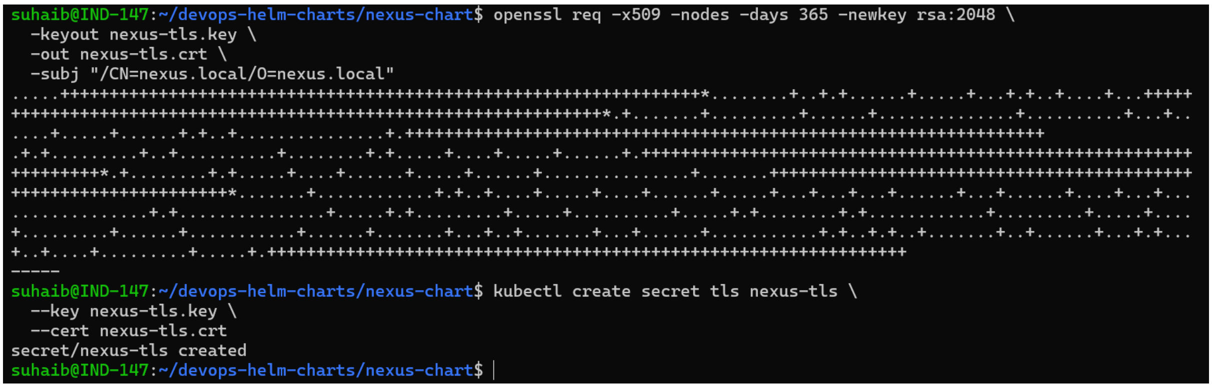


```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ tree
.
├── charts
├── Chart.yaml
├── templates
│   ├── configmap.yaml
│   ├── deployment.yaml
│   ├── _helpers.tpl
│   ├── ingress.yaml
│   ├── pvc.yaml
│   ├── rbac.yaml
│   ├── secret.yaml
│   ├── serviceaccount.yaml
│   └── service.yaml
└── values.yaml

3 directories, 11 files
suhaib@IND-147:~/devops-helm-charts/nexus-chart$
```

Step 5: Deployment Steps

Create TLS Certificate for Ingress

```
# Create self-signed certificate for local development
openssl req -x509 -nodes -days 365 -newkey rsa:2048 \
  -keyout nexus-tls.key \
  -out nexus-tls.crt \
  -subj "/CN=nexus.local/O=nexus.local"

# Create TLS secret in Kubernetes
kubectl create secret tls nexus-tls \
  --key nexus-tls.key \
  --cert nexus-tls.crt
```



```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ openssl req -x509 -nodes -days 365 -newkey rsa:2048 \
  -keyout nexus-tls.key \
  -out nexus-tls.crt \
  -subj "/CN=nexus.local/O=nexus.local"
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-----
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ kubectl create secret tls nexus-tls \
  --key nexus-tls.key \
  --cert nexus-tls.crt
secret/nexus-tls created
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ |
```
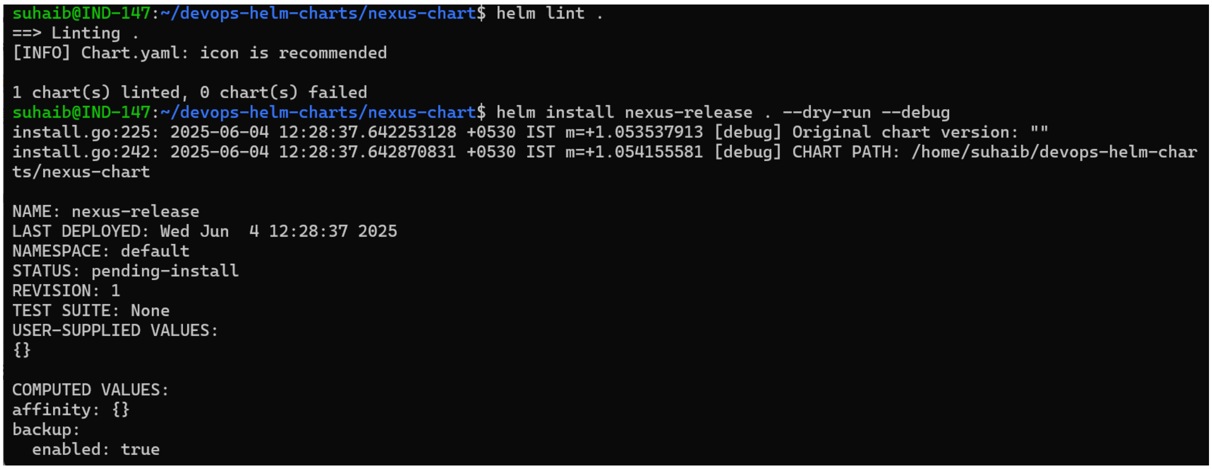
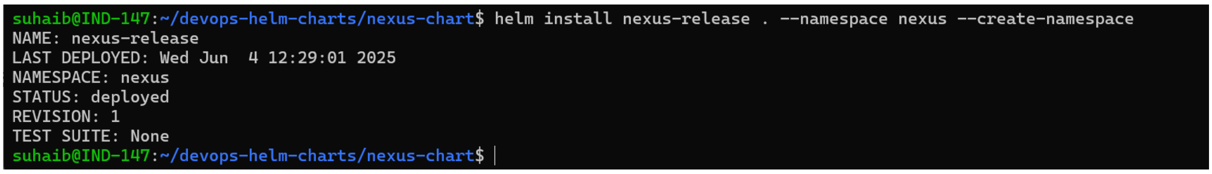

Deploy Nexus Using Helm

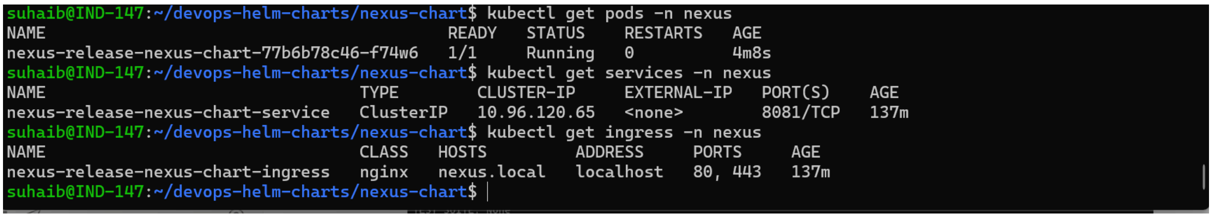
```
# Validate the Helm chart
helm lint .

# Dry run to check templates
helm install nexus-release . --dry-run --debug

# Install Nexus
helm install nexus-release . --namespace nexus --create-namespace

# Check deployment status
kubectl get pods -n nexus
kubectl get services -n nexus
kubectl get ingress -n nexus
```



```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ helm lint .
==> Linting .
[INFO] Chart.yaml: icon is recommended

1 chart(s) linted, 0 chart(s) failed
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ helm install nexus-release . --dry-run --debug
install.go:225: 2025-06-04 12:28:37.642253128 +0530 IST m=+1.053537913 [debug] Original chart version: ""
install.go:242: 2025-06-04 12:28:37.642870831 +0530 IST m=+1.054155581 [debug] CHART PATH: /home/suhaib/devops-helm-char
ts/nexus-chart

NAME: nexus-release
LAST DEPLOYED: Wed Jun  4 12:28:37 2025
NAMESPACE: default
STATUS: pending-install
REVISION: 1
TEST SUITE: None
USER-SUPPLIED VALUES:
{}

COMPUTED VALUES:
affinity: {}
backup:
  enabled: true
```



```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ helm install nexus-release . --namespace nexus --create-namespace
NAME: nexus-release
LAST DEPLOYED: Wed Jun  4 12:29:01 2025
NAMESPACE: nexus
STATUS: deployed
REVISION: 1
TEST SUITE: None
suhaib@IND-147:~/devops-helm-charts/nexus-chart$
```



```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ kubectl get pods -n nexus
NAME                                           READY   STATUS    RESTARTS   AGE
nexus-release-nexus-chart-77b6b78c46-f74w6   1/1     Running   0          4m8s
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ kubectl get services -n nexus
NAME                                TYPE        CLUSTER-IP     EXTERNAL-IP   PORT(S)    AGE
nexus-release-nexus-chart-service   ClusterIP   10.96.120.65   <none>        8081/TCP   137m
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ kubectl get ingress -n nexus
NAME                                CLASS   HOSTS         ADDRESS     PORTS     AGE
nexus-release-nexus-chart-ingress   nginx   nexus.local   localhost   80, 443   137m
suhaib@IND-147:~/devops-helm-charts/nexus-chart$
```

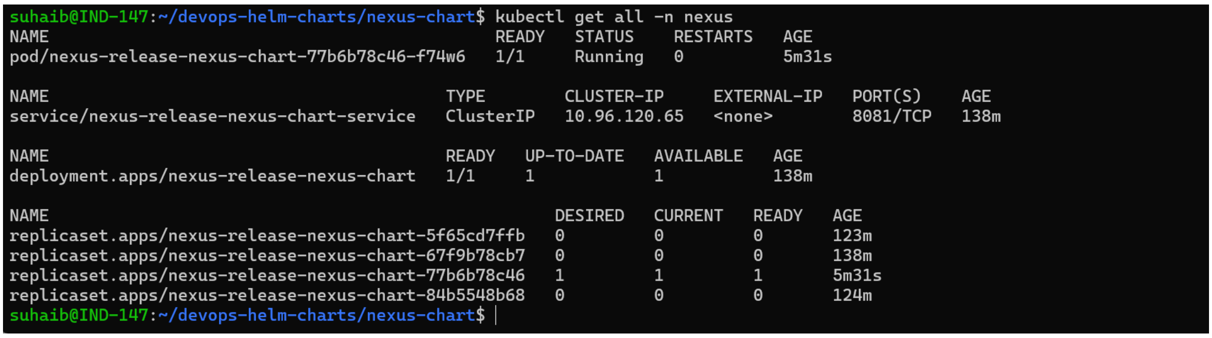
Access Nexus

```
# Add nexus.local to your hosts file (in WSL)
echo "127.0.0.1 nexus.local" | sudo tee -a /etc/hosts

# Port forward if ingress is not working
kubectl port-forward -n nexus svc/nexus-release-nexus-chart-service 8081:8081

# Get Nexus admin password (auto-generated on first run)
kubectl exec -n nexus deployment/nexus-release-nexus-chart -- cat /nexus-data/admin.password
```

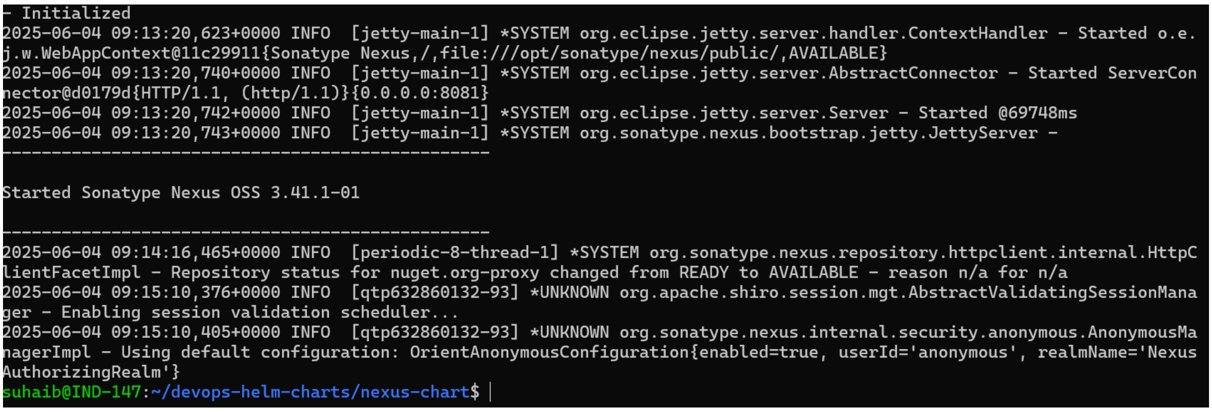
Verify Installation

```
# Check all resources
kubectl get all -n nexus
```

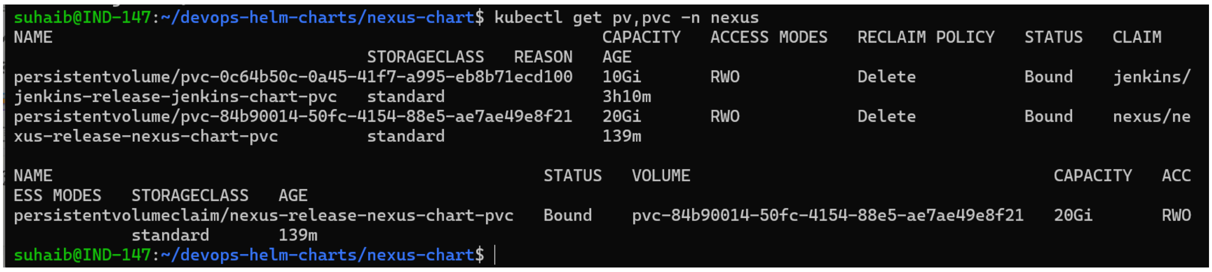
```
# Check logs
kubectl logs -n nexus deployment/nexus-release-nexus-chart

# Check persistent volume
kubectl get pv,pvc -n nexus
```



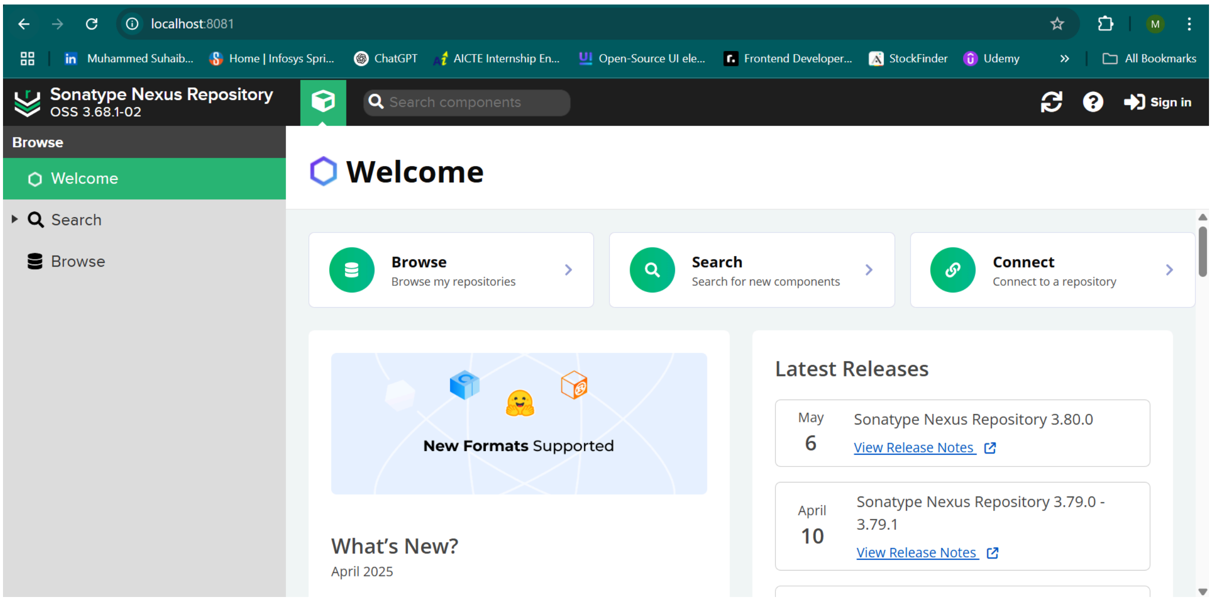
```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ kubectl get all -n nexus
NAME                                            READY   STATUS    RESTARTS   AGE
pod/nexus-release-nexus-chart-77b6b78c46-f74w6   1/1     Running   0          5m31s

NAME                                      TYPE        CLUSTER-IP     EXTERNAL-IP   PORT(S)    AGE
service/nexus-release-nexus-chart-service   ClusterIP   10.96.120.65   <none>        8081/TCP   138m

NAME                                      READY   UP-TO-DATE   AVAILABLE   AGE
deployment.apps/nexus-release-nexus-chart   1/1     1            1           138m

NAME                                                  DESIRED   CURRENT   READY   AGE
replicaset.apps/nexus-release-nexus-chart-5f65cd7ffb   0         0         0       123m
replicaset.apps/nexus-release-nexus-chart-67f9b78cb7   0         0         0       138m
replicaset.apps/nexus-release-nexus-chart-77b6b78c46   1         1         1       5m31s
replicaset.apps/nexus-release-nexus-chart-84b5548b68   0         0         0       124m
suhaib@IND-147:~/devops-helm-charts/nexus-chart$
```



```
- Initialized
2025-06-04 09:13:20,623+0000 INFO  [jetty-main-1] *SYSTEM org.eclipse.jetty.server.handler.ContextHandler - Started o.e.
j.w.WebAppContext@11c29911{Sonatype Nexus,/,file:///opt/sonatype/nexus/public/,AVAILABLE}
2025-06-04 09:13:20,740+0000 INFO  [jetty-main-1] *SYSTEM org.eclipse.jetty.server.AbstractConnector - Started ServerCon
nector@d0179d{HTTP/1.1, (http/1.1)}{0.0.0.0:8081}
2025-06-04 09:13:20,742+0000 INFO  [jetty-main-1] *SYSTEM org.eclipse.jetty.server.Server - Started @69748ms
2025-06-04 09:13:20,743+0000 INFO  [jetty-main-1] *SYSTEM org.sonatype.nexus.bootstrap.jetty.JettyServer -
-------------------------------------------------

Started Sonatype Nexus OSS 3.41.1-01

-------------------------------------------------
2025-06-04 09:14:16,465+0000 INFO  [periodic-8-thread-1] *SYSTEM org.sonatype.nexus.repository.httpclient.internal.HttpC
lientFacetImpl - Repository status for nuget.org-proxy changed from READY to AVAILABLE - reason n/a for n/a
2025-06-04 09:15:10,376+0000 INFO  [qtp632860132-93] *UNKNOWN org.apache.shiro.session.mgt.AbstractValidatingSessionMana
ger - Enabling session validation scheduler...
2025-06-04 09:15:10,405+0000 INFO  [qtp632860132-93] *UNKNOWN org.sonatype.nexus.internal.security.anonymous.AnonymousMa
nagerImpl - Using default configuration: OrientAnonymousConfiguration{enabled=true, userId='anonymous', realmName='Nexus
AuthorizingRealm'}
suhaib@IND-147:~/devops-helm-charts/nexus-chart$
```



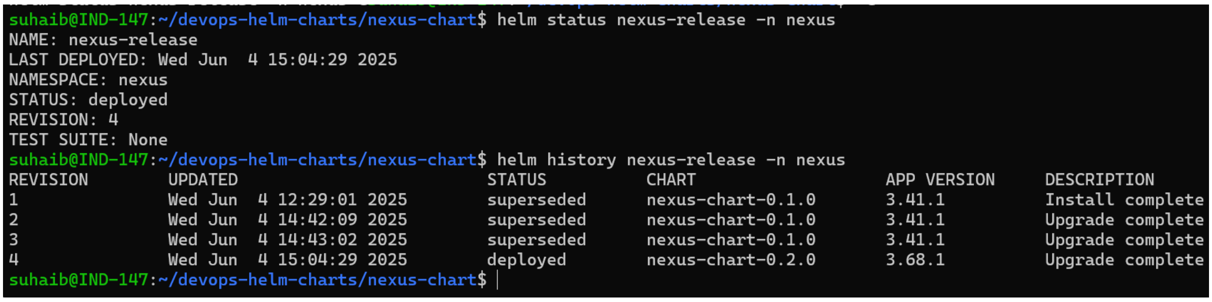
```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ kubectl get pv,pvc -n nexus
NAME                                                          CAPACITY   ACCESS MODES   RECLAIM POLICY   STATUS   CLAIM
                                        STORAGECLASS   REASON   AGE
persistentvolume/pvc-0c64b50c-0a45-41f7-a995-eb8b71ecd100   10Gi       RWO            Delete           Bound    jenkins/
jenkins-release-jenkins-chart-pvc   standard                3h10m
persistentvolume/pvc-84b90014-50fc-4154-88e5-ae7ae49e8f21   20Gi       RWO            Delete           Bound    nexus/ne
xus-release-nexus-chart-pvc         standard                139m

NAME                                                  STATUS   VOLUME                                     CAPACITY   ACC
ESS MODES   STORAGECLASS   AGE
persistentvolumeclaim/nexus-release-nexus-chart-pvc   Bound    pvc-84b90014-50fc-4154-88e5-ae7ae49e8f21   20Gi       RWO
            standard       139m
suhaib@IND-147:~/devops-helm-charts/nexus-chart$
```



Step 6: Management and Maintenance

Upgrade Nexus

```
# Update values.yaml with new configuration
# Then upgrade
helm upgrade nexus-release . --namespace nexus

# Check upgrade status
helm status nexus-release -n nexus
helm history nexus-release -n nexus
```

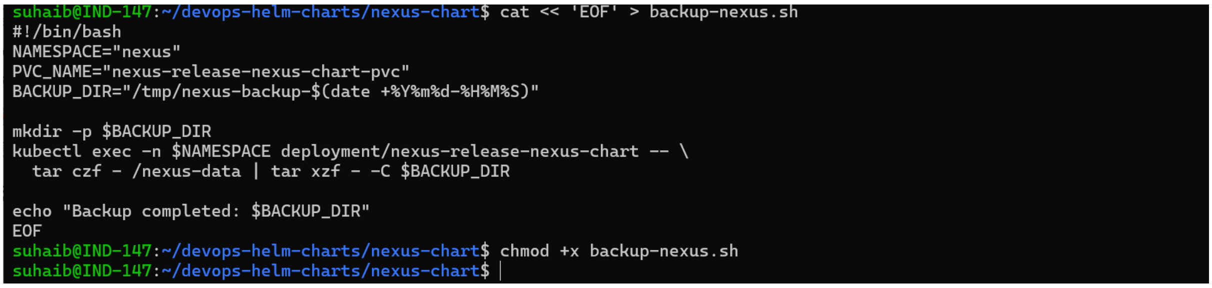


```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ helm status nexus-release -n nexus
NAME: nexus-release
LAST DEPLOYED: Wed Jun  4 15:04:29 2025
NAMESPACE: nexus
STATUS: deployed
REVISION: 4
TEST SUITE: None
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ helm history nexus-release -n nexus
REVISION        UPDATED                         STATUS          CHART                   APP VERSION     DESCRIPTION
1               Wed Jun  4 12:29:01 2025        superseded      nexus-chart-0.1.0       3.41.1          Install complete
2               Wed Jun  4 14:42:09 2025        superseded      nexus-chart-0.1.0       3.41.1          Upgrade complete
3               Wed Jun  4 14:43:02 2025        superseded      nexus-chart-0.1.0       3.41.1          Upgrade complete
4               Wed Jun  4 15:04:29 2025        deployed        nexus-chart-0.2.0       3.68.1          Upgrade complete
suhaib@IND-147:~/devops-helm-charts/nexus-chart$
```

Backup and Recovery

```
# Create backup script
cat << 'EOF' > backup-nexus.sh
#!/bin/bash
```

```
NAMESPACE="nexus"
PVC_NAME="nexus-release-nexus-chart-pvc"
BACKUP_DIR="/tmp/nexus-backup-$(date +%Y%m%d-%H%M%S)"

mkdir -p $BACKUP_DIR
kubectl exec -n $NAMESPACE deployment/nexus-release-nexus-chart -- \
  tar czf - /nexus-data | tar xzf - -C $BACKUP_DIR

echo "Backup completed: $BACKUP_DIR"
EOF

chmod +x backup-nexus.sh
```



```
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ cat << 'EOF' > backup-nexus.sh
#!/bin/bash
NAMESPACE="nexus"
PVC_NAME="nexus-release-nexus-chart-pvc"
BACKUP_DIR="/tmp/nexus-backup-$(date +%Y%m%d-%H%M%S)"

mkdir -p $BACKUP_DIR
kubectl exec -n $NAMESPACE deployment/nexus-release-nexus-chart -- \
  tar czf - /nexus-data | tar xzf - -C $BACKUP_DIR

echo "Backup completed: $BACKUP_DIR"
EOF
suhaib@IND-147:~/devops-helm-charts/nexus-chart$ chmod +x backup-nexus.sh
suhaib@IND-147:~/devops-helm-charts/nexus-chart$
```

Monitoring and Troubleshooting

```
# Monitor Nexus resources
kubectl top pods -n nexus
kubectl describe pod -n nexus nexus-release-nexus-chart-xxx

# Check events
kubectl get events -n nexus --sort-by=.metadata.creationTimestamp

# Debug common issues
kubectl exec -it -n nexus deployment/nexus-release-nexus-chart -- /bin/bash
```

Step 7: Configuration Guide

Repository Configuration

After deployment, access Nexus at `http://nexus.local` and configure repositories:

1. **Maven Central Proxy Repository**
2. **Docker Registry**
3. **NPM Registry**
4. **Raw Repository for artifacts**

Security Configuration

1. Change default admin password
2. Create service accounts for CI/CD
3. Configure LDAP/Active Directory integration
4. Set up repository permissions

Integration with Jenkins

Update Jenkins to use Nexus for artifact storage:

```
# In Jenkins values.yaml
jenkins:
  jcasc:
    configScripts:
      nexus-config: |
        unclassified:
          globalNexusConfiguration:
            nxrmConfigs:
              - nxrmUrl: "http://nexus-release-nexus-chart-service.nexus.svc.cluster.local:8081"
                credentialsId: "nexus-credentials"
```

Step 8: Cleanup

```
# Uninstall Nexus
helm uninstall nexus-release -n nexus

# Delete namespace
kubectl delete namespace nexus
```

```
# Delete TLS secret (if needed)
kubectl delete secret nexus-tls
```

Production Considerations

Resource Scaling

```
nexus:
  resources:
    requests:
      memory: "4Gi"
      cpu: "2000m"
    limits:
      memory: "8Gi"
      cpu: "4000m"
```

External Database

For production, use external PostgreSQL:

```
database:
  external:
    enabled: true
    host: "postgres.example.com"
    port: 5432
    name: "nexus"
    username: "nexus"
    password: "your-secure-password"
```

High Availability

For HA setup, consider:

- External blob storage (S3, Azure Blob)
- Database clustering
- Load balancer configuration
- Multiple replicas with shared storage