[Jenkins Deployment Instructions](https://wiki.ercot.com/display/CIA/Jenkins+Deployment+Instructions)

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Purpose

This wiki page describes the procedure for deploying or updating a Jenkins instance deployed into a Kubernetes cluster at ERCOT. Alternative instructions can be found [here](https://wiki.ercot.com/pages/viewpage.action?pageId=153095747)for deploying using a regular Windows or Linux system without a container engine.

Deployments

**Pre-reqs (Container Tooling)**

1. Container engine client (Docker-CE, Docker Desktop, Podman, etc).
2. Verify that the relevant version has been distributed to the target environment here <https://repo.ercot.com/ui/bundles/source/Jenkins-JCasC?type=packages>
3. Docker access to [docker.repo.ercot.com](http://docker.repo.ercot.com/)
4. Helm access to https://<environment>.edge.repo.ercot.com/artifactory/helm/
5. Access to core configuration yaml from the jcasc-configuration git repo. [https://stash.ercot.com/projects/JCASC/repos/jcasc-configuration/browse](https://stash.ercot.com/projects/CICD/repos/jcasc-configuration/browse)
6. Access to instance/group configuration yaml from the appropriate group git repo. https://stash.ercot.com/projects/[JCASC](https://stash.ercot.com/projects/CICD/repos/jcasc-configuration/browse)/repos/jcasc-configuration-<group-abbreviation>/browse

**Instructions**

1. Start a container running the [docker.repo.ercot.com/ercot/tools/openshift/client/helm:latest](http://docker.repo.ercot.com/ercot/tools/openshift/client/helm:latest) image by running

docker run --name helm --interactive --tty docker.repo.ercot.com/ercot/tools/openshift/client/helm:latest

1. Add the helm chart repository by running (<environment> = dev, test, prod has no prefix)

helm repo add ercot-charts  https://<environment>.edge.repo.ercot.com/artifactory/helm/

1. Update your local metadata for the helm charts repository by running

helm repo update

1. Confirm that jcasc is available and the version number by running

helm search repo ercot-charts/jcasc

1. Login to the target OpenShift cluster by running (<clustername> = labk8s, devk8s, testk8s, ptk8s (prod-taylor), pbk8s (prod-bastrop))

oc login api.<clustername>.ercot.com:6443

1. Clone the core [jcasc-configuration](https://stash.ercot.com/scm/cicd/jcasc-configuration.git" \t "_blank) repository from the JCASC project in stash onto your workstation (not inside the helm client container) then copy the configuration-<environment>.yaml file's contents into your helm client container using vim or docker cp.

docker cp /path/to/workstation/core/configuration-<environment>.yaml helm:/home/ocpadmin/configuration-core.yaml

1. Clone the appropriate **jcasc-configuration-<group-abbreviation>** repository from the JCASC project in stash onto your workstation (not inside the helm client container) then copy the configuration-<environment>.yaml file's contents into your helm-agent container using vim or docker cp.

docker cp /path/to/workstation/group/configuration-<environment>.yaml helm:/home/ocpadmin/configuration-group.yaml

1. Perform a dry-run of the deployment to ensure that things render correctly by running. Verify that there are no error messages in the output, if there are any, they are most likely to be at the top of the output.
2. helm upgrade jenkins-<group-abbreviation> ercot-charts/jcasc --install --values /home/ocpadmin/configuration-core.yaml --values /home/ocpadmin/configuration-group.yaml --create-namespace --namespace jenkins-<group-abbreviation> --dry-run

CRITICAL NOTE: The ordering of core configuration and instance or group configuration is IMPORTANT. Core configuration must be provided first in the argument list and instance or group configuration must be provided second. If these are provided out of order the resulting configuration may not work as expected.

1. Perform the real deployment by removing the "--dry-run" flag from the previous command and re-running (see above code block). Capture the output from each helm upgrade command as evidence.
2. Repeat steps 6-9 for any additional instances being deployed into the same OpenShift cluster.

**Verification**

1. After completing all intended deployments verify them by running this script. You will need to set the hosts variable with the appropriate URLs for the instances being deployed. The syntax for running the script is "./<script-name> <username> <password>". At this time any ERCOT AD user's username/password should suffice. If the script runs successfully it validates AD login, Jenkins' TLS certificate, the instances are responsive, and retrieves the deployed version numbers.
2. #!/bin/bash
3. stamp=`date +%Y%m%d`
4. hosts='<relevant-instance-urls-here-separated-by-newlines>'
5. while IFS= read -r line ; do curl -u $1:$2 -sSL --verbose $line -o /dev/null 2>&1 | grep -i -e "x-jenkins:" -e "Host:" >> jenkins-deployment-evidence-$stamp.txt; done <<< "$hosts"
6. Verify that the version numbers found in the date stamped "jenkins-deployment-evidence-$stamp.txt" file match the version number from the deployment request.
7. Detailed verification instructions can be found [here](https://wiki.ercot.com/display/CIA/Jenkins+Test+Procedure).

**Monitoring**

1. Ensure that Site Scope monitoring is configured and operational for the URLs listed below.

**Troubleshooting**

1. Expired Service Account Password – If you encounter a Jenkins instance where users cannot login, you are confident that it is not a password issue on their part, and you've checked the instance's logs using the OpenShift console and seen error messages mentioning connectivity with active directory you may want to run the following command on a Windows system to verify whether Jenkins' service account password has expired. The command will output a number of things about the service account in AD but the specific interesting value is "Password expires". The password expires field will tell you exactly when the account's password expires or if it has already expired.

net user <service-account> /domain

**Group Abbreviations**

| **Team Name** | **Abbreviation** |
| --- | --- |
| Common Platforms | cp |
| Commercial Application Services | cas |
| Web Design and Access Services | wdas |
| IT Tools Development | itt |
| Infrastructure Automation (IT Tools Development) | ia |
| Enterprise Information Services | eis |
| Quality Assurance | qa |

**Deployments**

| **Instance Name** | **Environment** | **Platform** | **URLs** | **Version** | **Deployed (//)** |
| --- | --- | --- | --- | --- | --- |
| Jenkins Development | DEVELOPMENT | Container | [https://jenkins-dev.apps.devk8s.ercot.com](https://jenkins-dev.apps.devk8s.ercot.com/) | 2.289.1 |  |
| Jenkins Infrastructure Automation Development | DEVELOPMENT | Container | [https://jenkins-ia.apps.devk8s.ercot.com](https://jenkins-ia.apps.devk8s.ercot.com/) | 2.289.1 |  |
| Jenkins Test | TEST | Container | [https://jenkins-test.apps.testk8s.ercot.com](https://jenkins-test.apps.testk8s.ercot.com/) | 2.277.3 |  |
| Jenkins Test (VM) | TEST | VM |  |  |  |
| Jenkins Infrastructure Automation Test | TEST | Container | [https://jenkins-ia.apps.testk8s.ercot.com](https://jenkins-ia.apps.testk8s.ercot.com/) | 2.277.3 |  |
| Jenkins Common Platforms | PRODUCTION | Container | [https://jenkins-cp.apps.ptk8s.ercot.com](https://jenkins-cp.apps.ptk8s.ercot.com/) or [https://jenkins-cp.apps.pbk8s.ercot.com](https://jenkins-cp.apps.pbk8s.ercot.com/) | 2.277.3 |  |
| Jenkins Commercial Application Services | PRODUCTION | Container | [https://jenkins-cas.apps.ptk8s.ercot.com](https://jenkins-cas.apps.ptk8s.ercot.com/) or [https://jenkins-cas.apps.pbk8s.ercot.com](https://jenkins-cas.apps.pbk8s.ercot.com/) | 2.277.3 |  |
| Jenkins IT Tools Development | PRODUCTION | Container | [https://jenkins-itt.apps.ptk8s.ercot.com](https://jenkins-itt.apps.ptk8s.ercot.com/) or [https://jenkins-itt.apps.pbk8s.ercot.com](https://jenkins-itt.apps.pbk8s.ercot.com/) | 2.277.3 |  |
| Jenkins Infrastructure Automation | PRODUCTION | Container | [https://jenkins-ia.apps.ptk8s.ercot.com](https://jenkins-ia.apps.ptk8s.ercot.com/) or [https://jenkins-ia.apps.pbk8s.ercot.com](https://jenkins-ia.apps.pbk8s.ercot.com/) | 2.277.3 |  |
| Jenkins Enterprise Information Services | PRODUCTION | Container | [https://jenkins-eis.apps.ptk8s.ercot.com](https://jenkins-eis.apps.ptk8s.ercot.com/) or [https://jenkins-eis.apps.pbk8s.ercot.com](https://jenkins-eis.apps.pbk8s.ercot.com/) | 2.277.3 |  |
| Jenkins Energy Management Systems (VM) | PRODUCTION | VM |  |  |  |
| Jenkins Market Management Systems (VM) | PRODUCTION | VM |  |  |  |
| Jenkins Quality Assurance | PRODUCTION | Container | [https://jenkins-qa.apps.ptk8s.ercot.com](https://jenkins-qa.apps.ptk8s.ercot.com/) or [https://jenkins-qa.apps.pbk8s.ercot.com](https://jenkins-qa.apps.pbk8s.ercot.com/) | 2.277.3 |  |
| Jenkins Web Design and Access Services | PRODUCTION | Container | [https://jenkins-wdas.apps.ptk8s.ercot.com](https://jenkins-wdas.apps.ptk8s.ercot.com/) or [https://jenkins-wdas.apps.pbk8s.ercot.com](https://jenkins-wdas.apps.pbk8s.ercot.com/) |  |  |