JFrog Distribution

Overview

JFrog Distribution is an on-premise, centralized platform that lets you provision software release distribution. It is a core part of JFrog Enterprise+, managing Release Bundles and their distribution processes, including release content, permission levels, and target destinations.

Distribution provides a secure and structured platform to distribute release binaries to multiple remote locations and update them as new release versions are produced. As part of the release flow, release bundles are verified by the target destination to ensure that they are signed correctly and safe to use.

JFrog Distribution securely manages the distribution of your software releases offering the following benefits:

- Structured platform to distribute release binaries as a single coherent release bundle.
- Secure delivery and distribution by signing the release bundle.
- Efficient network utilization by optimizing replication, dramatically reducing network load and release bundle synchronization time from source Artifactory to target instance or Edge node.
- Auditing and traceability by tracking all changes associated with a release bundle.
- Secure and Protected Release Bundles: JFrog Xray supports indexing and scanning of Release Bundles as well as defining Watches and Policies on Release Bundles. You can apply a policy on a Watch containing a Block Release Bundle Distribution action to prevent distributing a Release Bundle to edge nodes if it meets a security or License policy defined in JFrog Xray. For more information, see Xray Scanning of Release Bundles.

The Distribution Flow

The high-level distribution flow has two main steps:

- Creating a Release Bundle
  A Release Bundle can be created in the JFrog Platform webUI or by calling the Create Release Bundle REST API endpoint in JFrog Distribution. This call specifies a variety of parameters including the files comprising the release bundle, and different properties associated with it. Since a release bundle is immutable, any file included in a release bundle cannot be deleted from Artifactory. JFrog Distribution collects the required metadata about the artifacts specified in the request by using an AQL query.

- Scanning Your Release Bundles by Xray
  To scan your Release Bundle by JFrog Xray, the Release Bundle must first be declared as an indexed resource. For more information, see Indexing Resources.
Distributing a Release Bundle

A release bundle can be distributed in the JFrog Platform WebUI or by calling the Distribute Release Bundle REST API endpoint in JFrog Distribution.

Blocking Release Bundle Distribution

Setting a Watch on a Release Bundle containing a Policy set with a Block Distributing action, will automatically block distributing the infected Release Bundle based on the Xray scanning results. For more information, see Distributing Release Bundles.

The distribution process includes the following steps:

1. Start a distribution transaction
   In steps 1-3, JFrog Distribution queries JFrog Mission Control for details of the distribution target nodes: JFrog Artifactory Edges ("Edge nodes"). It then primes the Edge nodes to receive the distributed packages by providing information about distributed files such as their checksum, and providing a GPG key to validate the authenticity of the bundle as a whole.

2. Transfer files with smart replication
   In steps 4-6, JFrog Distribution invokes the Replicator on the source Artifactory which distributes files over to the Edge nodes by replicating them.

3. End a distribution transaction
   In step 7, JFrog Distribution notifies the Edge nodes that the transaction is complete. In turn, each Edge node validates authenticity of the transferred bundle using the GPG key provided when the transaction started. It then validates the integrity of the transferred
files by validating their checksum and hosts them in the correct place as specified in the release bundle.