IBM Dependency Based Build Overview

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Overview

IBM Dependency Based Build (DBB)

IBM Dependency Based Build provides the capabilities to build traditional z/OS applications such as COBOL and PL/I. The goal of DBB is to provide automation capabilities based on a standard, modern scripting language that can be used on z/OS. DBB is built as a standalone product that does not require a specific source code manager or pipeline orchestration solution.

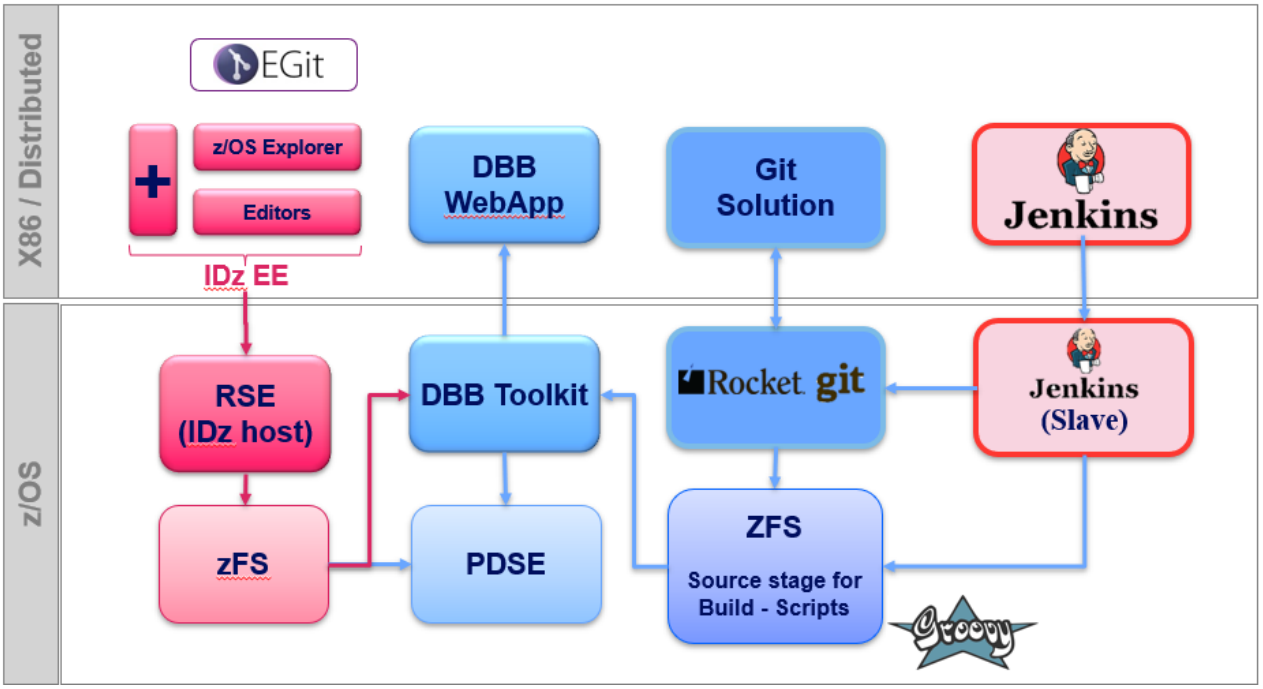
In addition to being offered standalone, DBB is also included in IBM Developer for z Systems Enterprise Edition (IDz EE) and IBM z Open Development (ZoD).

Git and DBB Architecture

Many Enterprise customers are researching solutions based on Git, the de-facto standard version control system in the open source community. They see this as a potential option and approach to modernize the tool aspect their mainframe development practices, and consolidate into a single software configuration management, or source code management, (SCM) solution and enterprise DevOps pipeline.

DBB provides the necessary capabilities of dependency analysis and build scripting to automate the build process as driven through a pipeline coordinator like Jenkins.

The diagram below provides an overview example of a z/OS pipeline comprised of DBB and complementary components.



Installation and Configuration

IBM Dependency Based Build (DBB) consists of an SMP/E installable component and a zip file with the web application and samples. The toolkit and the web application can be installed in any order, but you must install both to perform a full verification.

The Dependency Based Build Knowledge Center can be found here:

https://www.ibm.com/support/knowledgecenter/SS6T76_1.0.6/welcome.html

which contains an overview, here:

https://www.ibm.com/support/knowledgecenter/SS6T76_1.0.6/intro.html

The main installation and configuration section of the Knowledge Center is here:

https://www.ibm.com/support/knowledgecenter/SS6T76_1.0.6/install_overview.html

Samples and additional information can be found on GitHub:

https://github.com/IBM/dbb

When using DBB with Git, Git for z/OS from Rocket Software is recommended for handling the conversion between ASCII and EBCDIC character encodings. Instructions for its installation are included in the DBB Knowledge Center here:

https://www.ibm.com/support/knowledgecenter/en/SS6T76_1.0.6/setup_git_on_uss.html

The DBB Server

The DBB server consists of a web application which stores program dependency information and provides the ability retrieve program dependency information, and to store build reports. The web application provides REST APIs which are used with the toolkit APIs to create intelligent build scripts that take into consideration program dependencies.

Its installation instructions are here:

https://www.ibm.com/support/knowledgecenter/SS6T76_1.0.6/install_overview.html

The z/OS DBB Toolkit

The toolkit provides a set of Java APIs that can be used to define an intelligent build script. The toolkit contains a Groovy implementation for z/OS configured to use with the APIs to simplify the process of creating the intelligent build script. The APIs can be used with any other language, the samples provided will use Groovy. The APIs include capability such as:

- Run MVS commands
- Run TSO/ISPF commands
- Store and retrieve dependency information
- Utility capabilities such as copying to PDSE from z/OS
- zImport capability for migration to git
- Ability to create and store the build report

Its program directory is located here:

https://www.ibm.com/support/knowledgecenter/SS6T76_1.0.6/setup_dbb_toolkit.html

DBB Samples

The samples provide a set of Groovy scripts along with example programs to demonstrate how intelligent build scripts can be created. The samples are built such that they can be used as a starting point for a build process. The samples will be maintained in https://github.com/IBM/dbb.

Integrating with Jenkins

https://www.ibm.com/support/knowledgecenter/SS6T76_1.0.6/jenkinsintegration.html

Integrating with IBM Developer for z Systems

https://www.ibm.com/support/knowledgecenter/SS6T76_1.0.6/idz.html