

Static Code Analysis (Klocwork)

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1. How to use Klocwork

1.1. Pre-requisites

Please ensure that you have a **CodeAnalysisDetails** section available in **Profile File(.ini)**. You can check this with the following command.

```
devNext ws details -name <WORKSPACE_NAME>
```

You should be able to see **CodeAnalysisDetails** section in the output as follows:

```
[CodeAnalysisDetails]
BUILD_SPECIFICATION=android
URL = https://kw.group1.visteon.com:8443
BL_STREAM = NIS_DI_BL/NIS_DI_P33C_BL_MY25_EP30479
VP_STREAM = NIS_DI_P33X_VIP/NIS_DI_P33C_VIP_MY25_EP30479
GP_STREAM = NIS_DI_P33X_GIP/NIS_DI_P33C_GIP_MY25_EP30479
OUT = programs/nissan/my2025/p33c/out/fda
DEFECT_GATE = warning
```

Ensure that you have the correct STREAM available in the Section. For each build type respective stream should be given. For more details check with your integrators.

BUILD_SPECIFICATION: Default tool to generate build specification is kwinject. For android and java based projects this variable needs to be defined in INI file with value as **android**.

OR

-**bs** option can be passed to overwrite the default BUILD_SPECIFICATION

Note: Default value for BUILD_SPECIFICATION is **c**. To overwrite this variable can be defined in INI file or passed through CLI in dn commands.

1.2. Analysis

A new subcommand has been introduced to execute FDA to ease the developer flow.

```
devNext analyze [OPTIONS]
```

You can get more details on command with --help option.

```
Usage: dn analyze [OPTIONS]

Wrapper for Klocwork tool for Code Quality analysis

Options:
  -t, --type TEXT          Type of Build command to be executed
  -u, --url TEXT           URL of the server for analysis
  -s, --stream TEXT        Project Stream name
  -o, --out TEXT           Output directory for the analysis results
  -F, --force              Forces the analysis even if tables are
                           available
  -I, --incremental        Only analyze files from last changed
  -if, --ignore-files TEXT Comma separated files to be ignored during
                           build
  --prog TEXT              Extra programs to be intercepted during
                           build
  -pd TEXT                 Path to local project directory
  -sd TEXT                 Path to setting directory for local project
  --auth / -na, --no-auth  Flag for authentication (Default:--no-auth)
  -ph, --pre-hooks TEXT    Enables code quality check mechanism in CI
  --hooks                  Flag for identifying the build type
  --fda TEXT               Files to be analyzed
  --rr, --reduction-rate INTEGER Reduction rate for the existing defects
  -td, --tables-dir TEXT   Name of the tables directory folder
  --name TEXT              Name of the Workspace
  --env TEXT               <ENVNAME>=<ENVVALUE> can be used to set an
                           environment variable. If you have more than
                           one env variable then need to repeat '--env'
                           for each variable.Example: --env
                           MANIFEST=/home/users/manifest.xml --env
                           BRANCH=develop
  -nb, --no-build          To avoid executing the build command
  --channel TEXT           Channel for the analyzer Package
  -x, --exclude-issues TEXT Path to .sconf for issue exclusion
  -bs, --build-spec [android|kotlin|c]
                           Flag to specify which Klocwork tool to be
                           used for build specification genertaion
  -av, --android-version INTEGER Android version of the source code
  -ad, --android-dir TEXT  Directory path where android source code
                           will be available
  -nr, --no-resolve        Option to avoid following symbolic links
                           during build
  -ks, --kotlin-src TEXT   Path of kotlin source code
  --excludes TEXT          Paths to be excluded for kotlin analysis
  --includes TEXT          Paths to be included for Kotlin analysis
  --help                   Show this message and exit.
```

FDA Authentication

By default, `--no-auth/-na` is enabled in devNext to skip authentication prompts. Use `--auth` for first-time FDA analysis or to authenticate manually. Once done, re-authentication isn't needed.

```
dn analyze --type <BUILD_TYPE> --fda <path/of/file/to/be/analyzed> --auth
```

1.2.1. FDA Analysis

There are 3 ways in which you can execute FDA analysis on files.

1.2.1.1. Single file analysis

For single file analysis you can directly use --fda option followed by the filepath to be analyzed

```
dn analyze --type <BUILD_TYPE> --fda <path/of/file/to/be/analyzed>
```

For Example:

```
dn analyze --type vp --fda cluster-platform/turing/cdd/backlight/src/src/BacklightCdd.c
```

1.2.1.2. Multiple file analysis

For multiple files you can give all the file names with comma (,) separated values or you can give a single file which contains list of all the files to be analyzed.

```
dn analyze --type <BUILD_TYPE> --fda <file1>,<file2>,<file3>
```

Example 1:

```
dn analyze --type vp --fda cluster-platform/turing/cdd/backlight/src/src/BacklightCdd.c, cluster-platform/turing/cdd/backlight/src/src/BacklightCdd.c
```

Example 2:

```
dn analyze -type <BUILD_TYPE> --fda <path/to/changed.txt>
```

1.2.1.3. All changed files analysis

To perform analysis on all the changed files keyword all needs to be given after --fda

For Example:

```
dn analyze -type <BUILD_TYPE> --fda all
```

1.3. Analyze command options

Here is detailed information about all the options that are available with analyze command.

- **--stream:** If you want to overwrite the default stream available in INI file you can use this.
- **--out:** To overwrite the default directory for Klocwork output folder for all files and tables
- **--force:** To force kwbuildproject command to overwrite the existing tables.
- **--incremental:** kwbuildproject will do the incremental analysis with existing tables
- **--prog:** To specify extra programs to be intercepted during kwinject command
- **--ignore-files:** Comma separated files to be ignored during the build.
- **--no-auth:** Avoids asking for credentials for that instance
- **--no-build:** Avoid execution of the build and uses older kwinject.out file
- **--pd:** Specifies path to local project directory.
- **--sd:** Specifies path to settings directory.
- **--exclude-issues:** Path of the .sconf file for issue exclusion.
- **--build-specification:** Which tool to use for generating build specification.

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