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Polyspace Cheat Sheet

Which Polyspace Variant Do I Need? ≥

Polyspace Bug Finder

High-quality, secure, and compliant code

Polyspace Code Prover

Robust, fully trusted, and reusable code

Basic defects, coding standards (e.g., MISRA™, CERT®, AUTOSAR®), good practice, data flow, performance, security (CWE, crypto), etc.

Undefined behavior, numeric, memory, asserts, etc.

Many	**Checkers**	Critical subset
Quick Scan	**Analysis Depth**	Exhaustive Proof
Probable defects	**Reporting Criteria**	Proven Findings
Low	**Setup Complexity**	Higher
Few	**False Positives**	Possible
Possible	**False Negatives**	None
Code metrics, SQO, custom	**Result Metadata**	Value ranges, full call graphs

Mathematical guarantee, all inputs, equivalent to *exhaustive* testing

Nothing found
Purple — Guideline Violation
Red — Probable Defect

Green — (Proven) Correct
Orange — Vulnerability
Gray — Dead Code
Red — (Proven) Defect

Minimizes review efforts

Set custom complexity thresholds, quantify quality and set objectives, forbid certain code constructs

See "Setup" & "Precision" to refine

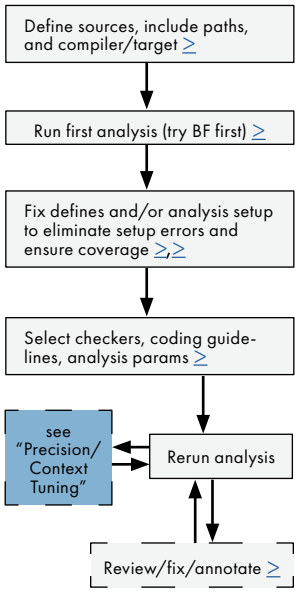
No missed bugs

Analyze global variable sharing, correct program initialization, data/control flows

Want fast semantic checks in your favorite IDE? See ≥

Analysis Setup >

Workflow



Option	Effect
`-D <def>`	sets preprocessor define ≥
`-lang <c|cpp|c-cpp>`	select C, CPP, or mixed
`-c-version <c99|...>` `-cpp-version <cpp11|...>`	select language version, e.g., C99 or C++17 ≥
`-compiler <keil|...>`	for supported compilers, see ≥
`-results-dir <folder>`	where to save results. Avoid network/shared folders ≥
`-misra3 <all|...>` `-cert-c <rules|...> ...`	(BF) enable various coding guideline checks ≥
`-main-generator`	(CP) no main() exists. Analyze code for all possible uses ≥
`-checkers <CWE|...>`	(BF) enable more checks ≥
`-code-metrics`	(BF) calc. complexity metrics ≥
`-class-analyzer <..>`	(CP) specify how C++ classes are analyzed ≥
`-incremental`	(BF) enable fast compilation ≥
`-classification`	Skip certain files/functions ≥
For multi-tasking/concurrency analysis, see ≥	

Precision/Context Tuning

Option	Effect
`-unit-by-unit`	(CP) each file is analyzed separately; faster results ≥
`-O<0|...|3>`	(CP) precision of analysis domain. Default=2 ≥
`-context-sensitivity <auto|...>`	(CP) control call context separation ≥
`-data-range-specifications <file>`	provide external context, such as call args ≥
`-functions-to-stub func1,func2`	list of functions to over-approximate ≥
`-functions-called-before-main f1,f2` `-main-generator-writes-variables <all|...>`	(CP) initialization functions to consider ≥ and how to model global variables ≥. Use with `-main-generator`
`-code-behavior-specifications <file>`	define forbidden funcs, parametrize checks, etc. ≥
`-checks-using-system-input-values`	(BF) enable stricter checks and counterexamples ≥
`-library`	Smart stubs for C++, AUTOSAR ≥

The options/flags are for command line use with Polyspace® Bug Finder™/Code Prover™ tools. To locate the equivalent settings in the GUI, open the search window and select "Configuration" as scope, then type option name.

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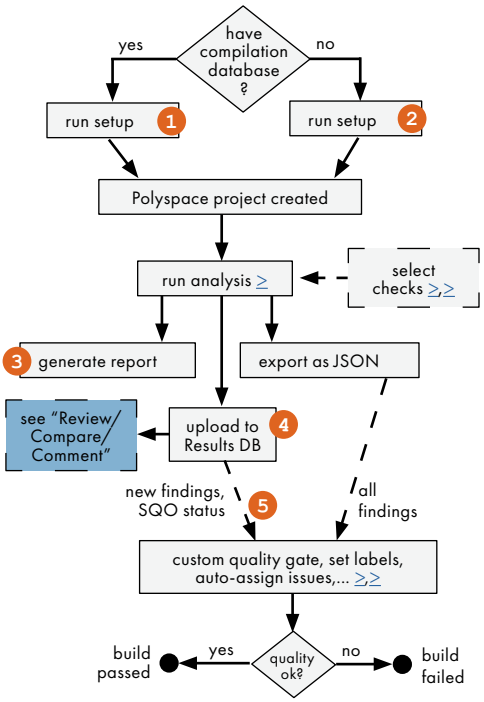
Automation of Analysis ≥

Workflow



Analysis Setup >

Usage	Effect
`polyspace-configure -compilation-database <json>` 1	Setup from JSON compilation database ≥ If JSON contains multiple targets, apply source filter ≥
`polyspace-configure [...] <build cmd>` 2	setup by sniffing build command (**`make`, `cmake`, `etc.`**) ≥
`-output-options-file my.opts`	write analysis setup to options file ≥
`-module -output-options-path psopt/`	write separate options file for each build target ≥
`-allow-overwrite`	replace existing files (recommended for automation) ≥

Report and Export ≥,≥

Usage	Effect
`polyspace-report-generator -template <path to *.rpt>` 3	export results as HTML/PDF/DOC report ≥
`polyspace-results-export -format <json-sarif|csv>`	export results in machine-readable format ≥

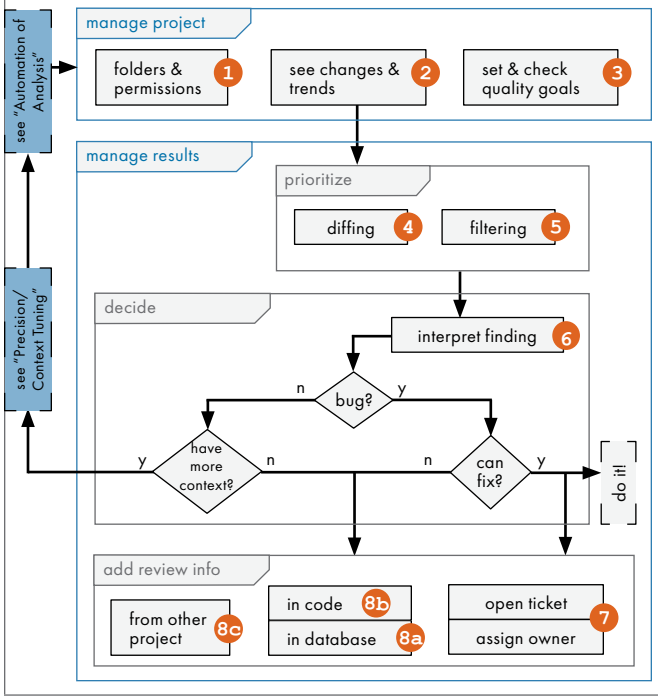
Upload/Query Results Database ≥

Usage	Effect
`polyspace-access <server> -upload <results-folder>` 4	upload the analysis results to the Polyspace Access results database (for review, see next section) ≥
`polyspace-access <server> -export <run-id-or-path> -new-findings ...` 5	download list of new findings compared to previous database run (e.g., for quality gate) ≥

Where **`<server>`** is a set of flags specifying host, port, and login of the results server. See ≥.

Review/Compare/Comment in Results Database ≥

Workflow



Where Can I ...?

Where	Details
Project Explorer 1	Create folders, move projects, assign users, manage roles ≥
Dashboard/ Project Overview 2	Summary of project, overview of findings and changes, metrics, historic trends and review status (open, assigned, etc.) ≥
Dashboard/ Quality Objectives 3	View progress relative to defined goals. Can be used to prioritize findings by type level. Project owners can define levels via ⚙ ≥
Dashboard/ Toolstrip 4	Select two runs to compare for changes like resolved, new, unresolved. Switch to specific dashboards like "defects" or switch to review mode to see results list ≥
Review/ Toolstrip 5	Use toolstrip to filter by category, review state, filename, etc. Use "Code Search" and context menu to navigate code ≥
Review/ All panels 6	Select item in results list, read details in yellow banner, inspect event trace & code, get contextual help with ⓘ 🔧. Additional views like call hierarchy via "Layout" button in toolstrip ≥
Review/ Details 7	Dropdown "Assigned to" sets owner. If bug tracker has been set up, button "Create ticket" is available to register a new issue. Use bulk selection (shift, ctrl) to mass-edit ≥
Review/ Details 8a	Set status, severity, and comments on findings. Data is carried over to subsequent runs. Review history available via "Layout" in toolstrip ≥
(Outside of Polyspace) 8b	Use inline comment syntax to justify findings in code. Review information is later shown as read-only in the database ≥
Project Explorer 8c	Right-click destination project and choose "Import Reviews from another project" to import reviews of similar findings ≥

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