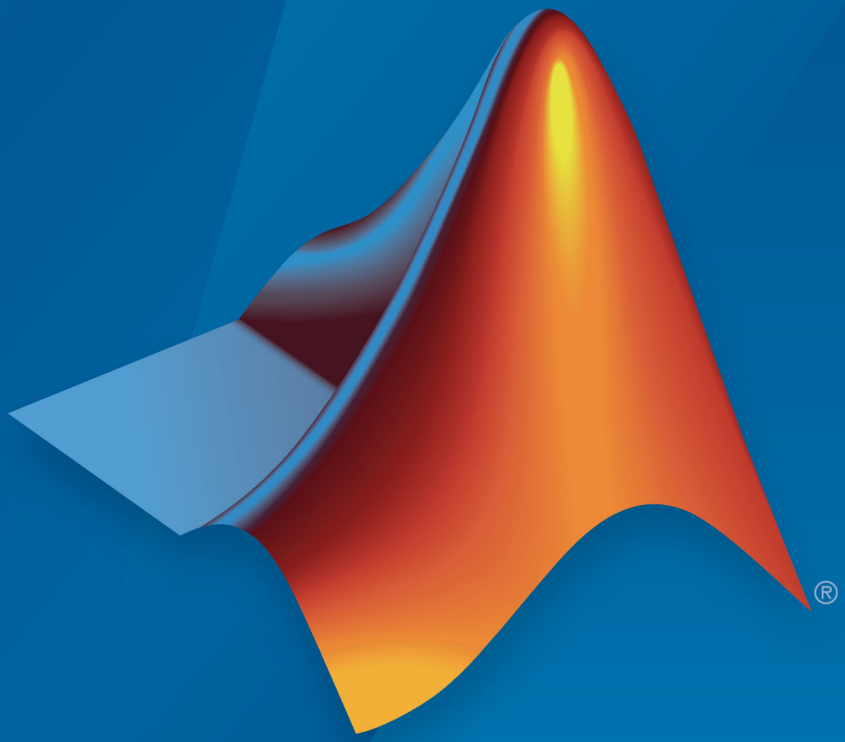
Polyspace® Code Prover™ Server™ Release Notes



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Polyspace® Code Prover™ Server™ Release Notes

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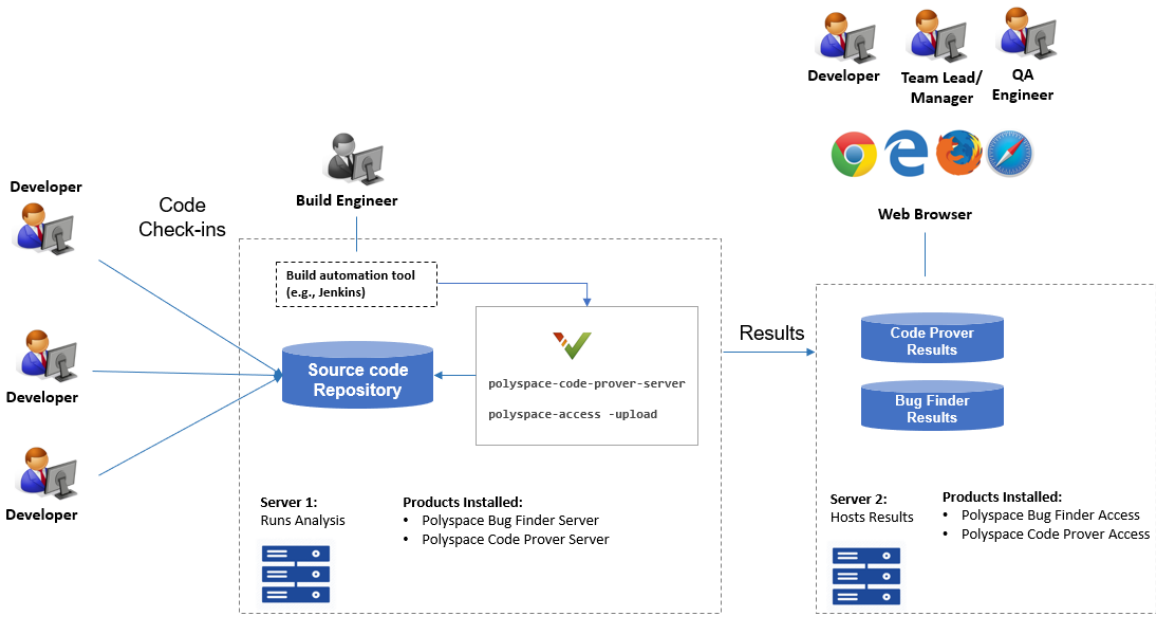
R2019a

Version: 10.0

New Features

Code Prover Analysis Engine Separated from Viewer: Run Code Prover analysis on server and view the results from multiple client machines

Summary: In R2019a, you can run Code Prover on a server with the new product, Polyspace® Code Prover™ Server™. You can then host the analysis results on the same server or a second server with the product, Polyspace Code Prover Access™. Developers whose code was analyzed and other reviewers such as quality engineers and development managers can fetch these results from the server to their desktops and view the results in a web browser, provided they have a Polyspace Code Prover Access license.



Note: Depending on the specifications, the same computer can serve as both Server 1 and Server 2.

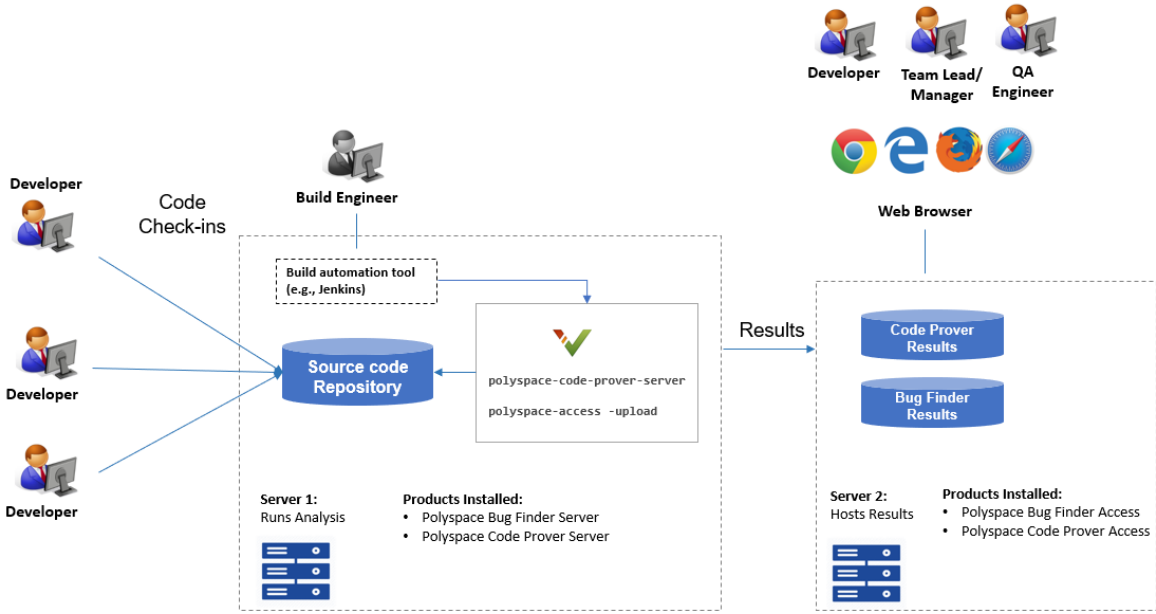
Benefits: You can run the Code Prover analysis on a few powerful server class machines but view the analysis results from many terminals.

With the desktop product, Polyspace Code Prover, you have to run the analysis and view the results on the same machine. To view the results on a different machine, you need a

second instance of a desktop product. The desktop products can now be used by individual developers on their desktops prior to code submission and the server products used after code submission. See “Polyspace Products for Code Analysis and Verification” (Polyspace Bug Finder Server).

Continuous Integration Support: Run Code Prover on server class computers with continuous upload to Polyspace Access web interface

Summary: In R2019a, you can check exhaustively for run-time errors on server class machines as part of continuous integration. When developers submit code to a shared repository, a build automation tool such as Jenkins can perform the checks using the new Polyspace Code Prover Server product. The analysis results can be uploaded to the Polyspace Access web interface for review. Each reviewer with a Polyspace Code Prover Access license can login to the Polyspace Access web interface and review the results.



Note: Depending on the specifications, the same computer can serve as both Server 1 and Server 2.

See:

- “Install Polyspace Server and Access Products”
- “Run Polyspace Code Prover on Server and Upload Results to Web Interface”

Benefits:

- *Automated post-submission checks*: In a continuous integration process, build scripts run automatically on new code submissions before integration with a code base. With the new product Polyspace Code Prover Server, a Code Prover analysis can be included in this build process. The analysis can run Code Prover checks on the new code submissions and report the results. The results can be reviewed in the Polyspace Access web interface with a Polyspace Code Prover Access license.
- *Collaborative review*: The analysis results can be uploaded to the Polyspace Access web interface for collaborative review. For instance:
  - Each quality assurance engineer with a Polyspace Code Prover Access license can review the Code Prover results for a project and assign issues to developers for fixing.
  - Each development team manager with a Polyspace Code Prover Access license can see an overview of Code Prover results for all projects managed by the team (and also drill down to details if necessary).

  For further details, see the release notes of Polyspace Code Prover Access (Polyspace Code Prover Access).

Continuous Integration Support: Set up testing criteria based on Code Prover static analysis results

Summary: In R2019a, you can run Code Prover on server class machines as part of unit and integration testing. You can define and set up testing criteria based on Code Prover static analysis results.

For instance, you can set up the criteria that new code submissions must have zero red checks (definite run-time errors) before integration with a code base. Any submission with red checks can cause a test failure and require code fixes.

See:

- `polyspace-code-prover-server` for how to run Code Prover on servers.

- `polyspace-access` for how to export Code Prover results for comparison against predefined testing criteria.

If you use Jenkins for build automation, you can use the Polyspace plugin. The plugin provides helper functions to filter results based on predefined criteria. See “Sample Scripts for Polyspace Analysis with Jenkins”.

Benefits:

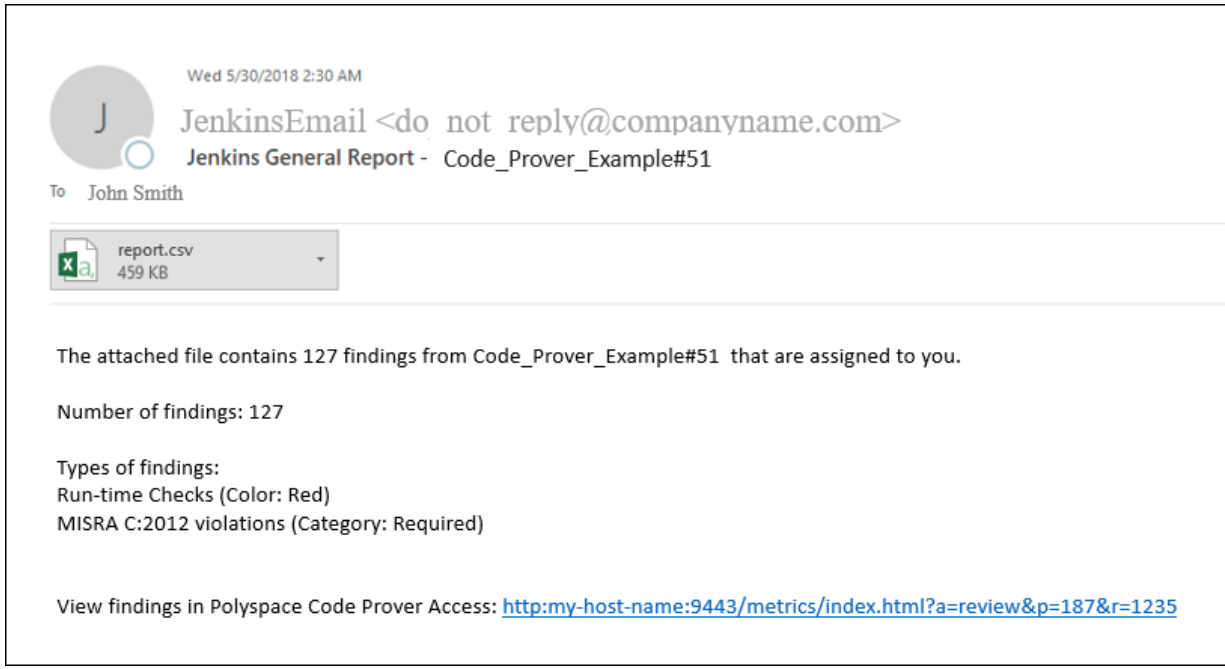
- *Automated testing*: After you define testing criteria based on Code Prover results, you can run the tests along with regular dynamic tests. The tests can run on a periodic schedule or based on predefined triggers.
- *Prequalification with Polyspace desktop products*: Prior to code submission, to avoid test failures, developers can check their submission with the same criteria as the server-side analysis. Using an installation of the desktop product, Polyspace Code Prover, developers can emulate the server-side analysis on their desktops and review the results in the user interface of the desktop product. For more information on the complete suite of Polyspace products available for deployment in a software development workflow, see “Polyspace Products for Code Analysis and Verification” (Polyspace Bug Finder Server).

  To save processing power on the desktop, the analysis can also be offloaded to a server and only the results reviewed on the desktop. See “Install Products for Submitting Polyspace Analysis from Desktops to Remote Server” (Polyspace Bug Finder Server).

Continuous Integration Support: Set up email notification with summary of Code Prover results after analysis

Summary: In R2019a, you can set up email notification for new Code Prover results. The email can contain:

- A summary of new results from the latest Code Prover run only for specific files or modules.
- An attachment with a full list of the new results. Each result has an associated link to the Polyspace Access web interface for more detailed information.



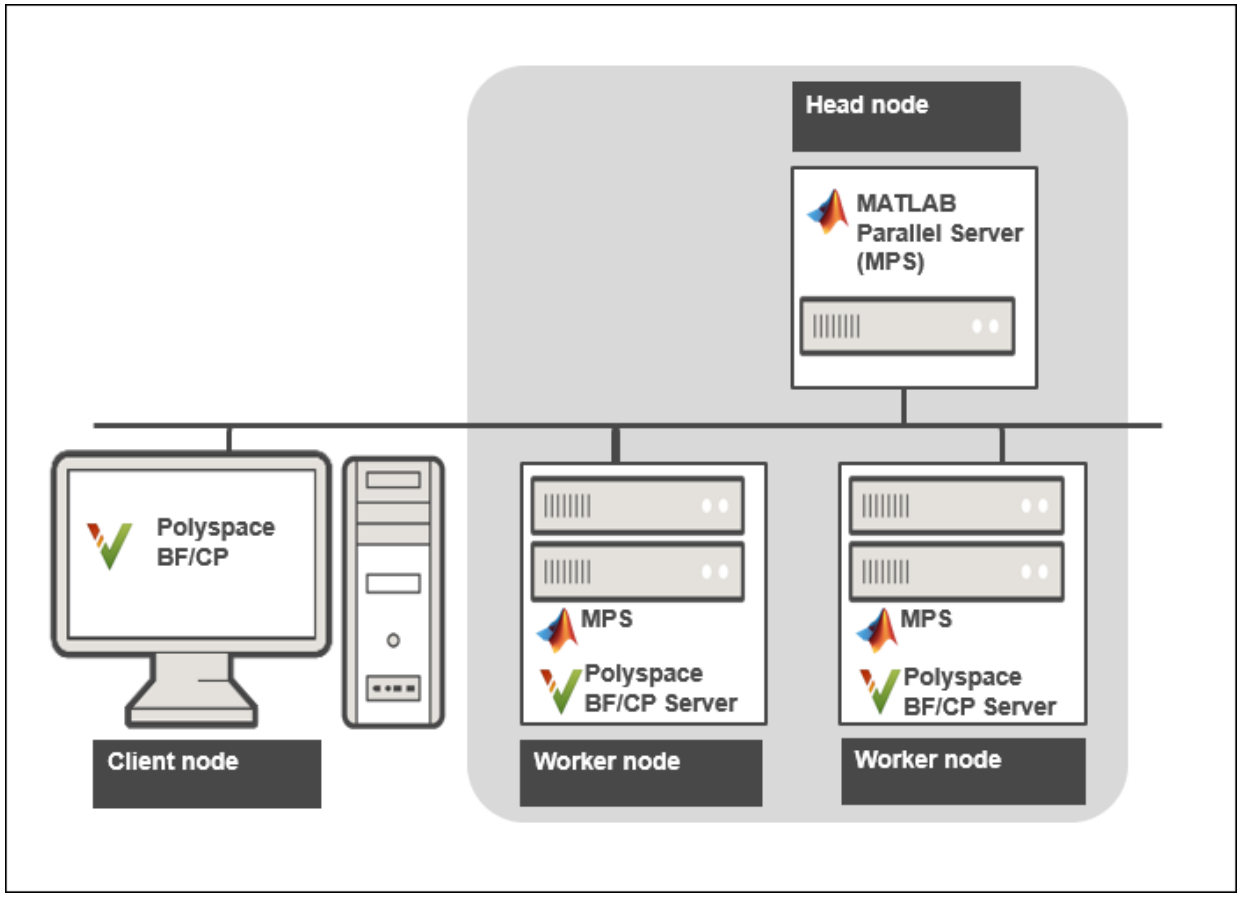
See “Send E-mail Notifications with Polyspace Code Prover Results”.

Benefits:

- *Automated notification*: Developers can get notified in their e-mail inbox about results from the last Code Prover run on their submissions.
- *Preview of Code Prover results*: Developers can see a preview of the new Code Prover results. Based on their criteria for reviewing results, this preview can help them decide whether they want to see further details of the results.
- *Easy navigation from e-mail summary to Polyspace Access web interface*: Each developer with a Polyspace Code Prover Access license can use the links in the e-mail attachments to see further details of a result in the Polyspace Access web interface.

Offloading Polyspace Analysis to Servers: Use Polyspace desktop products on client side and server products on server side

Summary: In R2019a, you can offload a Polyspace analysis from your desktop to remote servers by installing the Polyspace desktop products on the client side and the Polyspace server products on the server side. After analysis, the results are downloaded to the client side for review. You must also install MATLAB® Parallel Server™ on the server side to manage submissions from multiple client desktops.



See “Install Products for Submitting Polyspace Analysis from Desktops to Remote Server”.

Benefits: The Polyspace desktop products have a graphical user interface. You can configure options in the user interface with assistance from features such as auto-population of option arguments and contextual help. To save processing time on your desktop, you can then offload the analysis to remote servers.