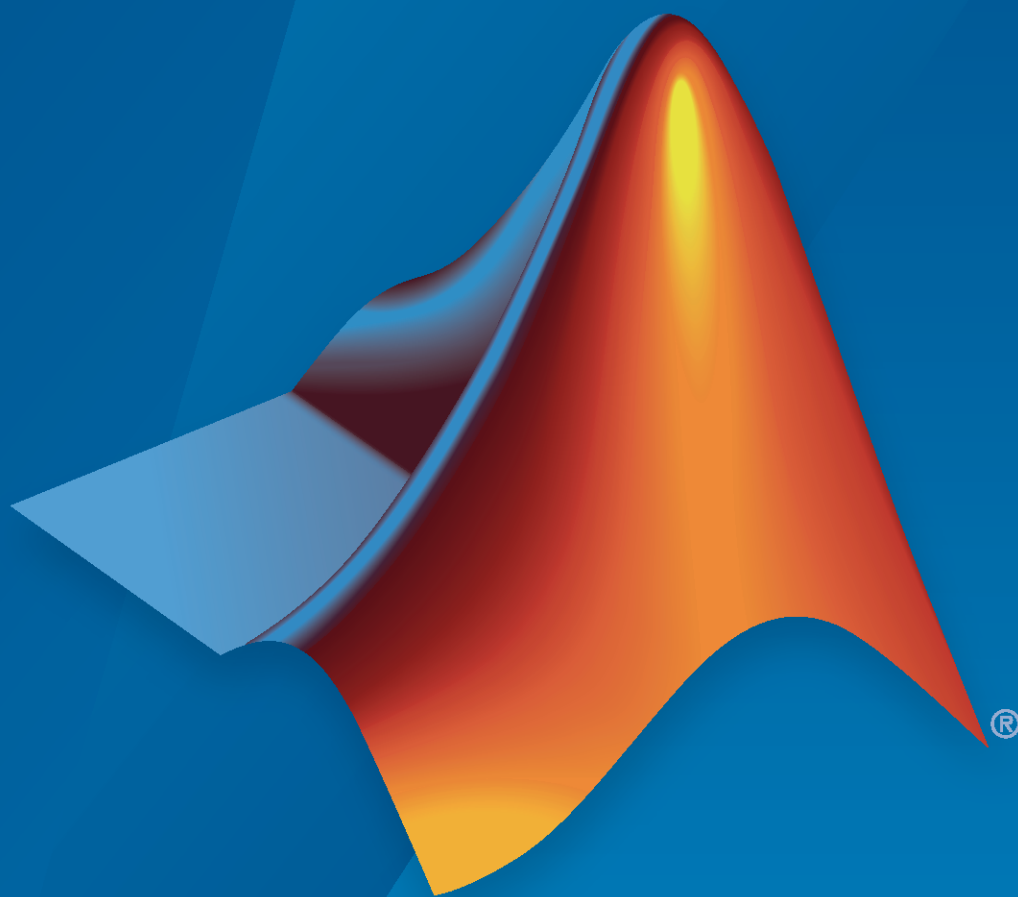


# Polyspace<sup>®</sup> Code Prover<sup>™</sup> Access<sup>™</sup> Release Notes



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*Polyspace® Code Prover™ Access™ Release Notes*

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# R2021a

---

**Version: 2.4**

**New Features**

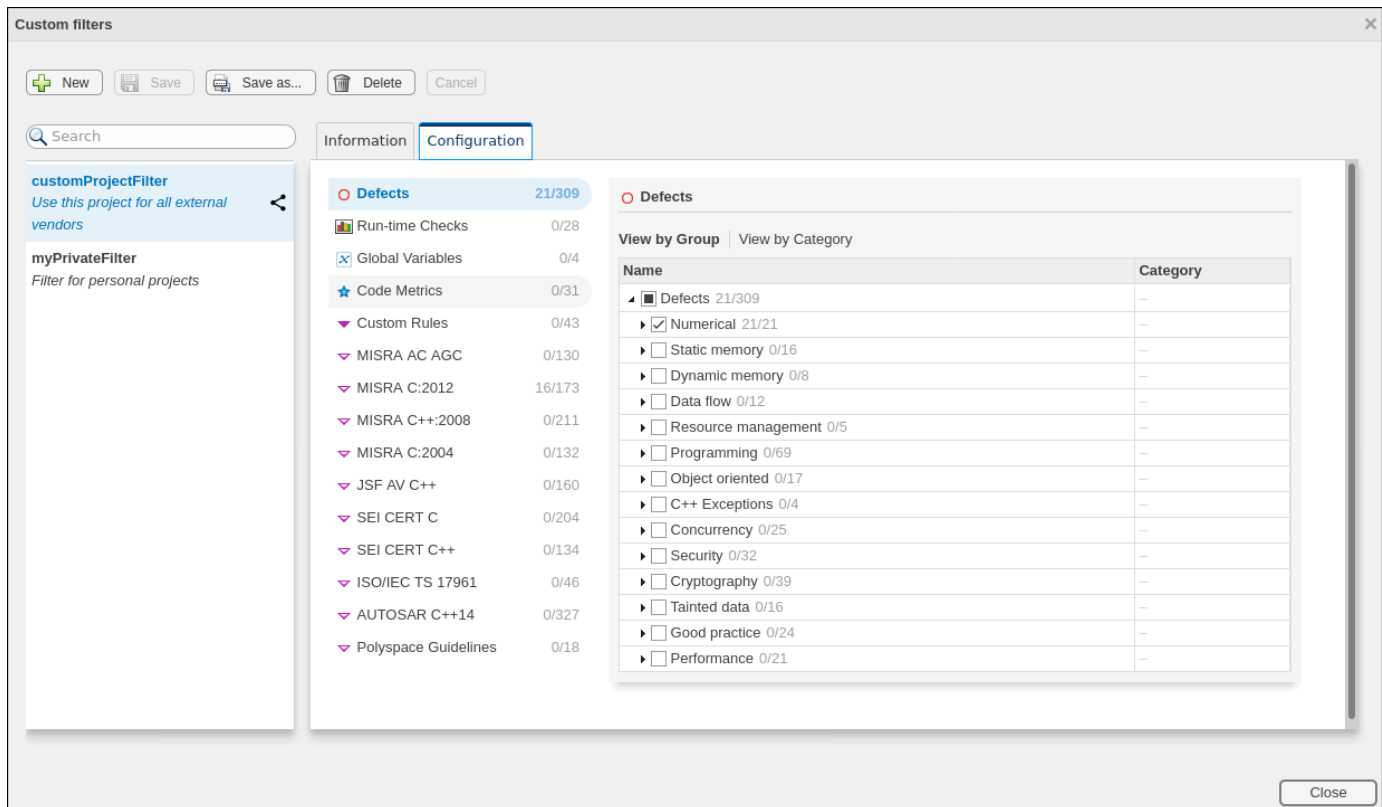
**Bug Fixes**

## Dashboard and Review in Web Browser

### Results Review Scope: Define and share custom families of filters

In R2021a, you can create custom families of filters to tailor the scope of your review to results that are relevant to only your project or organization. You can then share the customized review scopes with other Polyspace® Access users. See “Create Custom Filter Groups in Polyspace Access Web Interface”.

For example, you might want to review your code for violations of a subset of only **Numerical** defects and **MISRA C®: 2012** rules.



### Results Review Layout: Select view to prioritize review of code or results list

In R2021a, the Polyspace Access interface has different layouts to match your results review workflow.

The default **Code Review** layout enables you to focus on the **Source Code** while you investigate issues in your code.



The screenshot displays the 'Results Review' layout. The top navigation bar includes 'Dashboard', 'Current' (ID 1 - Job 1.0 - Uplo...), 'Apply / Manage', 'Defects', 'Coding Standards', 'Run-time Checks', 'Code Metrics', 'Global Variables', 'Filters', 'Environment', and 'Review'. The main area is divided into three panes: 'Results List', 'Result Details', and 'Source Code'. The 'Results List' shows a table of defects, with item 6677 selected. The 'Result Details' pane provides a description of the 'Data race' issue and an 'Access' table. The 'Source Code' pane shows the relevant code snippet.

Family	ID	Type	Group	Check	Information	Detail
54	Defects	Security	Unsafe call to a syste...	Impact: High	system	
57	Defects	Security	Unsafe call to a syste...	Impact: High	system	
72	Defects	Programming	Possibly unintended ...	Impact: High		
77	Defects	Programming	Invalid use of == op...	Impact: High	Use of	
78	Defects	Programming	Wrong type used in s...	Impact: High	The ty	
96	Defects	Static memory	Buffer overflow from ...	Impact: High	Forma	
6675	Defects	Programming	Declaration mismatch	Impact: High	Global	
6676	Defects	Programming	Typedef mismatch	Impact: High	size_t	
6677	Defects	Concurrency	Data race	Impact: High	Certain	
6678	Defects	Concurrency	Data race	Impact: High	Certain	
6684	Defects	Dynamic memory	Deallocation of previ...	Impact: High	Pointe	

Access	Access Protections	Task	File	Scope
Write (Non atomic) Operation might invo...	No protection	bug_datarace_task3()	concurrency.c	bug_de
Read	No protection	bug_datarace_task4()	concurrency.c	bug_de

```

concurrency.c
75 local_var = good_glob1;
76 END_CRITICAL_SECTION();
77 (void)printf("sd", local_var);
78
79
80
81
82 /*=====
83 * NON-ATOMIC DATA RACE
84 *=====*/
85 void use_longlong(long long entry);
86 long long bad_glob2; /* Defect: Data race */
87
88 void bug_datarace_task3(void) {
89     bad_glob2 += 1;
90 }
91
92 void bug_datarace_task4(void) {
93     long long local_var;
94     local_var = bad_glob2;
95     use_longlong(local_var);
96 }
97
98 long long good_glob2;
99
100 void corrected_datarace_task3(void) {
101     BEGIN_CRITICAL_SECTION(); /* Fix: Protect with a critical section */
102     good_glob2 += 1;
103     END_CRITICAL_SECTION();
104 }
105
106 void corrected_datarace_task4(void) {
107     long long local_var;
108     BEGIN_CRITICAL_SECTION();
109     local_var = good_glob2;
110     END_CRITICAL_SECTION();
111     use_longlong(local_var);
112 }
113
114
    
```

The **Results Review** layout prioritizes the **Results List** and **Result Details** panes as you review and triage findings.

This screenshot shows the 'Results Review' layout with the 'Results List' pane scrolled down to display a larger number of defects. The 'Result Details' pane remains open for the selected item (6677), showing the 'Data race' issue description and the 'Access' table. The 'Source Code' pane displays the relevant code snippet.

Family	ID	Type	Group	Check	Information	Detail
54	Defects	Security	Unsafe call to a syste...	Impact: High	system	
57	Defects	Security	Unsafe call to a syste...	Impact: High	system	
72	Defects	Programming	Possibly unintended ...	Impact: High		
77	Defects	Programming	Invalid use of == op...	Impact: High	Use	
78	Defects	Programming	Wrong type used in s...	Impact: High	The	
96	Defects	Static memory	Buffer overflow from ...	Impact: High	Form	
6675	Defects	Programming	Declaration mismatch	Impact: High	Glob	
6676	Defects	Programming	Typedef mismatch	Impact: High	size	
6677	Defects	Concurrency	Data race	Impact: High	Cert	
6678	Defects	Concurrency	Data race	Impact: High	Cert	
6684	Defects	Dynamic memory	Deallocation of previ...	Impact: High	Poin	
6692	Defects	Resource management	Resource leak	Impact: High	Stre	
6693	Defects	Static memory	Pointer or reference t...	Impact: High	Add	
6722	Defects	Data flow	Non-initialized variable	Impact: High	Der	
6724	Defects	Data flow	Non-initialized pointer	Impact: High	Loc	
6725	Defects	Data flow	Non-initialized variable	Impact: High	Loc	
6735	Defects	Dynamic memory	Use of previously fre...	Impact: High	Poin	
6736	Defects	Dynamic memory	Invalid free of pointer	Impact: High	Free	
6740	Defects	Numerical	Invalid use of standa...	Impact: High	Star	
6741	Defects	Numerical	Invalid use of standa...	Impact: High	Star	
6742	Defects	Numerical	Float conversion ove...	Impact: High	Con	
6743	Defects	Numerical	Integer conversion o...	Impact: High	Con	
6746	Defects	Numerical	Absorption of float o...	Impact: High	The	
6756	Defects	Numerical	Invalid use of standa...	Impact: High	Star	
6766	Defects	Programming	Character value abso...	Impact: High	Com	
6767	Defects	Programming	Variable length array	Impact: High	Size	

Access	Access Protections	Task	File	Scope
Write (Non atomic) Operation might invo...	No protection	bug_datarace_task3()	concurrency.c	bug_de
Read	No protection	bug_datarace_task4()	concurrency.c	bug_de

```

concurrency.c
88 /*=====
89 * NON-ATOMIC DATA RACE
90 *=====*/
91 void use_longlong(long long entry);
92 long long bad_glob2; /* Defect: Data race */
93
94 void bug_datarace_task3(void) {
95     bad_glob2 += 1;
96 }
97
98 void bug_datarace_task4(void) {
99     long long local_var;
100     local_var = bad_glob2;
101     use_longlong(local_var);
102 }
103
    
```

## Code Quality Comparison Between Runs: Filter and view information for previous findings fixed in the current run

In R2021a, if you compare two project runs and some of the findings from the **Baseline** run are **Fixed** in the **Current** run, you can filter for and view the source code and result details for these findings. See “Compare Analysis Results to Previous Runs”.

Polyspace Access considers a finding **Fixed** if either:

- You make changes to your code that fix an issue.
- The source code that contains an issue is deleted or is not part of the current analysis.

The screenshot shows the Polyspace interface with the following components:

- Top Bar:** Includes 'Dashboard', 'Current' (ID 6089 - Job 1.0 - ...), 'Baseline' (ID 6010 - Job 1.0 - ...), 'Apply / Manage', 'Run-time Checks', 'Code Metrics', 'Global Variables', 'Defects', 'Coding Standards', 'Open', 'To Do', 'In Progress', 'Show only' (Comment, filename, etc.), 'Filter out' (Comment, filename, etc.), 'Window', and 'Open in Desktop'.
- Navigation:** 'APPS', 'RUN', 'CUSTOM FILTERS', 'FAMILY FILTERS', 'FILTERS', 'ENVIRONMENT', 'REVIEW'.
- Results List:** Shows 243 / 8800 defects. A table lists defects with columns: Type, Group, Check, and Information. Several defects are marked as 'Fixed'.
- Result Details:** Displays a warning: 'This finding from Baseline run (ID 8010) is not in Current run (ID 6089)'. The finding is 'Memory leak (Impact: Medium)' with the description: 'Pointer 'pi' points to dynamically allocated memory. It has not been freed before the end of its scope.' It includes a table of events:

Event	File	Scope
1 Dynamic allocation	dynamicmemory.c	bug_memleak_array()
2 Assignment to local poi...	dynamicmemory.c	bug_memleak_array()
3 Memory leak	dynamicmemory.c	bug_memleak_array()

- Source Code:** Shows the source code for 'dynamicmemory.c' with a warning: 'This file is not in Current run'. The code snippet is:
 

```

193 int j;
194 int* pi = (int*)malloc(10 * sizeof(int));
195 if (pi == NULL) {
196     return;
197 }
198 for (i = 0; i < SIZE8; i++) {
199     pi[i] = 42 + i;
200 }
201 for (j = 0; j < SIZE9; j++) {
202     if (pi[j] == extval()) {
203         break;
204 }
205 }

```

Previously, you had to open the **Baseline** run as a separate tab to view the source code and result details for **Fixed** findings.

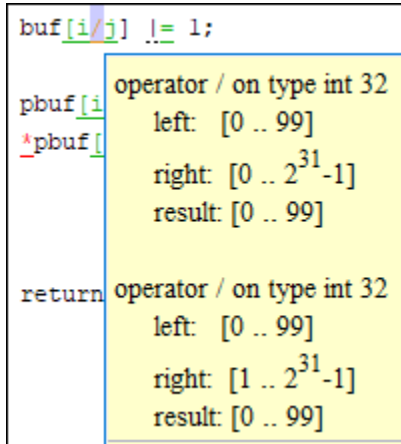
## Code Prover Result Messages: Redundant tooltips removed from += and similar operations

**Summary:** In R2021a, in code operations that use the shorthand form  $x+=y$ ,  $x-=y$ ,  $x*=y$ , and so on, if  $x$  contains an operation that triggers an orange check, you see only this orange check and the associated tooltip in the Code Prover results.

**Benefits:** Previously, you saw a green check in addition to an orange check because the operation in  $x$  happens twice, once on the left and once on the right side of the assignment. The orange check eliminated a problematic path and resulted in a subsequent green check. You also saw two copies of essentially the same tooltip. Starting in R2021a, these redundant tooltips have been removed.

For instance, this division operation previously triggered two checks and showed two copies of essentially the same range information in the tooltip. Starting in R2021a, you see only the upper copy, which represents range information before either of the two divisions are performed.

```
buf[i/j] .= 1;
pbuf[i]
^pbuf[i]
return
```



operator / on type int 32
left: [0 .. 99]
right: [0 .. 2 <sup>31</sup> -1]
result: [0 .. 99]
operator / on type int 32
left: [0 .. 99]
right: [1 .. 2 <sup>31</sup> -1]
result: [0 .. 99]

## Installation

### **License Management: Uploading of results to Polyspace Access no longer requires a license checkout**

In R2021a, the upload of analysis results to the Polyspace Access database does not trigger a Polyspace Access license checkout.

If you upload results as part of an automation script, you no longer consume a license when you run the script. Previously, each results upload triggered a license checkout.

### **User Manager: Enable pagination when requesting large set of users from LDAP server**

In R2021a, if you use an LDAP server to retrieve user profiles and authenticate user logins, you can enable pagination to retrieve a large set of users from the LDAP server. See “Authenticate Users from Your Organization LDAP Server”.

Typically, LDAP servers limit the number of entries that they return in a result set. If the number of entries exceed that limit, the result set is truncated. When you enable pagination, the number of results is broken up into smaller sets. You are able to retrieve all entries from the LDAP server when you query a large set of users.

### **Bug Tracking Tool: Create Jira tickets for Jira projects that use single select custom fields**

In R2021a, if you integrate the Jira software bug tracking tool (BTT) with Polyspace Access, you can create Jira tickets for Jira projects that are configured with single select custom fields. See “Configure Jira Software Bug Tracking Tool”.

Previously, Polyspace Access did not support the creation of Jira tickets in projects that used single select custom fields.

### **Admin Interface: Improved logging for Polyspace Access services**

In R2021a, when you view the logs for the Polyspace Access services in the **Admin** user interface, the logs are automatically refreshed. You do not need to reload the page to view new events.

# R2020b

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**Version: 2.3**

**New Features**

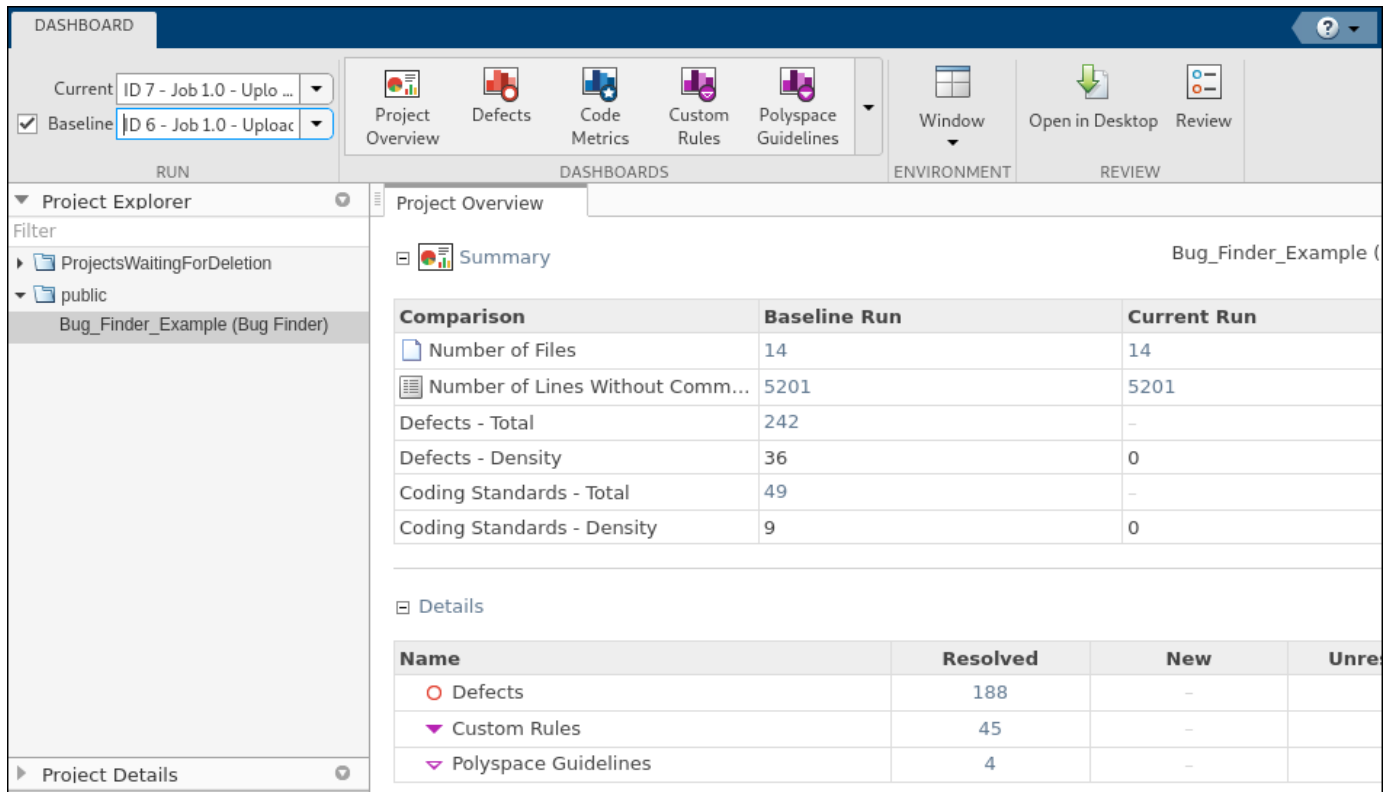
**Bug Fixes**

**Compatibility Considerations**

## Dashboard and Review in Web Browser

### Code Quality Improvement Progress: Compare results from current run to previous runs and determine progress in code quality improvement

In R2020b, you can select any two runs of a project in the Polyspace web interface (current and baseline runs) and compare them. You can compare a current run to only older baseline runs.



The screenshot displays the Polyspace web interface dashboard. The top navigation bar includes 'DASHBOARD', 'RUN', 'DASHBOARDS', 'ENVIRONMENT', and 'REVIEW'. The 'RUN' section shows 'Current' and 'Baseline' dropdowns, both set to 'ID 7 - Job 1.0 - Uplo...' and 'ID 6 - Job 1.0 - Uploac' respectively. The 'DASHBOARDS' section includes icons for 'Project Overview', 'Defects', 'Code Metrics', 'Custom Rules', and 'Polyspace Guidelines'. The 'ENVIRONMENT' section has 'Window' and 'Open in Desktop' options. The 'REVIEW' section has a 'Review' icon.

The main content area shows the 'Project Overview' for 'Bug\_Finder\_Example (Bug Finder)'. It includes a 'Summary' table comparing 'Baseline Run' and 'Current Run' across various metrics:

Comparison	Baseline Run	Current Run
Number of Files	14	14
Number of Lines Without Comm...	5201	5201
Defects - Total	242	-
Defects - Density	36	0
Coding Standards - Total	49	-
Coding Standards - Density	9	0

Below the summary is a 'Details' table showing the status of findings:

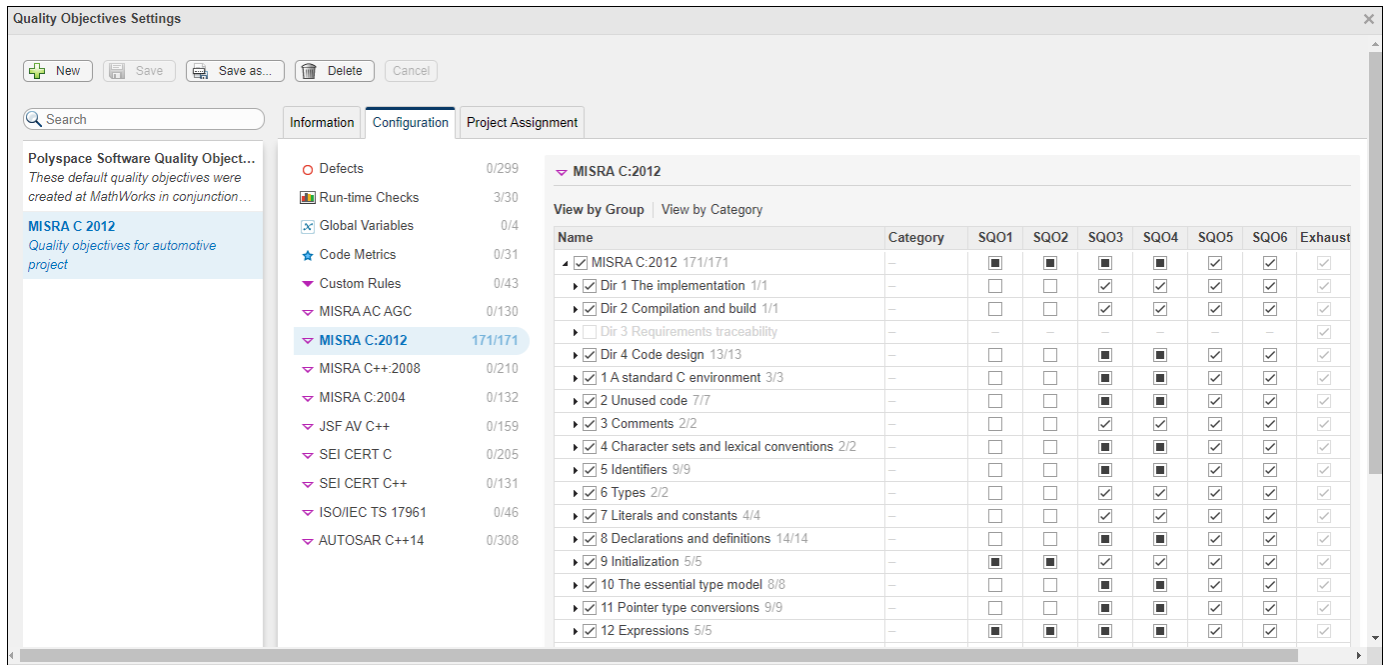
Name	Resolved	New	Unre
Defects	188	-	
Custom Rules	45	-	
Polyspace Guidelines	4	-	

The comparison shows the number of analysis findings that are:

- **Resolved.** Findings from the baseline run no longer found in the current run.
- **New.** Findings in the current run that were not present in the baseline run.
- **Unresolved.** Findings from the baseline run that are still present in the current run.

### Code Quality Objectives: Define custom quality objectives definitions and apply them to specific projects

In R2020b, you can create custom quality objectives definitions and apply those definitions to specific projects. For instance, if you want to track the compliance of a project with a coding standard, you can create Quality Objective thresholds for that coding standard and apply them to your project.

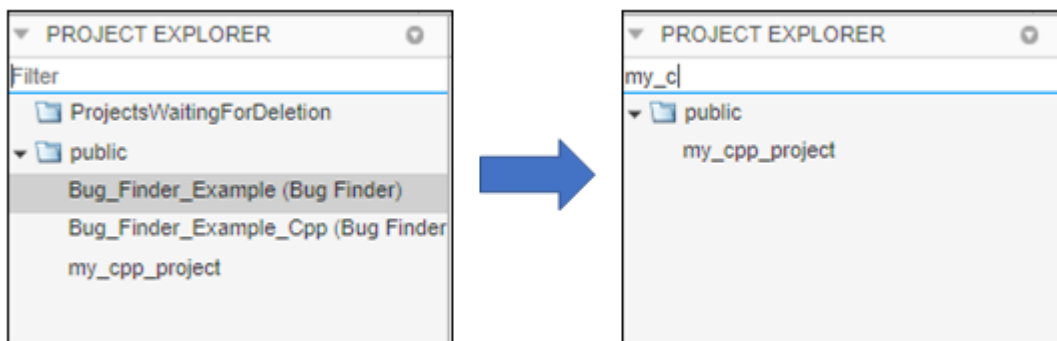


To create custom quality objectives definitions, you must be an **Administrator** or **Owner**.

Previously, custom quality objectives applied to all projects.

## Project Selection: Find a project in the Project Explorer through a text filter

In R2020b, you can use a text filter in the **Project Explorer** to find projects that are not visible in a folder hierarchy. The text filter is not case sensitive.



## Installation

### **Bug Tracking Tool: Integrate with Jira Software Cloud**

In R2020b, you can integrate Jira Software Cloud with Polyspace Access. After you configure Polyspace Access, you can create a Jira ticket to track Polyspace findings. The ticket is populated with details of the finding and a link to open that finding in Polyspace Access. See (Polyspace Bug Finder Access)Configure Issue Tracker (Polyspace Code Prover Access).

Previously, you could integrate Polyspace Access with only self-managed Jira Software.

### **Cluster Admin Settings: Validate values of settings on demand or on save**

In R2020b, the **Cluster Admin** validates the settings that you enter in the **Cluster Settings** when you save those settings. You can also validate the settings before you save by clicking **Validate now** at the bottom of the page.

### **HTTPS Configuration: Configure services without specifying ports or SSL certificates**

In R2020b, if you install Polyspace Access on a single node, the ports of the Polyspace Access services are no longer exposed. You do not need to specify port numbers for the services or to provide SSL private keys and certificates for the HTTPS configuration. See (Polyspace Bug Finder Access)Configure Polyspace Access for HTTPS (Polyspace Code Prover Access)

Previously, you had to check the availability of the ports for the services, and then you provided a private key and SSL certificate file to enable the HTTPS protocol for Polyspace Access.

### **Functionality Replaced: Polyspace Access embedded LDAP**

The Polyspace Access embedded LDAP is removed in R2020b. To continue using custom login credentials for Polyspace Access, use the **User Manager** internal directory instead. See Authenticate Users from Internal Directory (Polyspace Code Prover Access) (Polyspace Bug Finder Access).



The screenshot shows the 'User Manager' interface. At the top, there is a blue header with the text 'User Manager' and a user profile 'admin' with a dropdown arrow. Below the header is a 'Dashboard' section with a 'Create' button. The main content is a table with three columns: 'Sign-in ID', 'Display Name', and 'Email'. The table lists four users: 'admin' (ADMIN), 'jdoe' (John Doe), 'jsmith' (Jane Smith), and 'rroll' (Richard Roll). Each row has a small 'X' icon with a dropdown arrow on the right side.

Sign-in ID	Display Name	Email
admin <b>ADMIN</b>	admin	admin@email.com
jdoe	John Doe	
jsmith	Jane Smith	
rroll	Richard Roll	

## Compatibility Considerations

In the **User Manager** interface, create users to transfer the user names and passwords that you stored in the embedded LDAP LDIF file to the **User Manager** database.

## Changes in Polyspace Access docker containers, options, and binaries

In R2020b, the following docker containers, options, and binaries have been renamed:

- The cop-docker-agent binary is now called the admin-docker-agent
- **HTTPS Options**

Previous Option Name	Current Option Name
--https-certificate-file	--ssl-cert-file
--https-private-key-file	--ssl-key-file
--https-trusted-certificates-file	--ssl-ca-file

- **Containers**

Previous Container Name	Current Container Name
polyspace-db	polyspace-access-db-main
polyspace-etl	polyspace-access-etl-main
polyspace-gateway	gateway
polyspace-issuetracker	issuetracker-server-main
polyspace-web-server	polyspace-access-web-server-main

## **Compatibility Considerations**

In your scripts, replace instances of the previous names with the current names. You cannot reuse a settings configuration file (`settings.json`) from a previous release of Polyspace Access with the R2020b software.

# R2020a

---

**Version: 2.2**

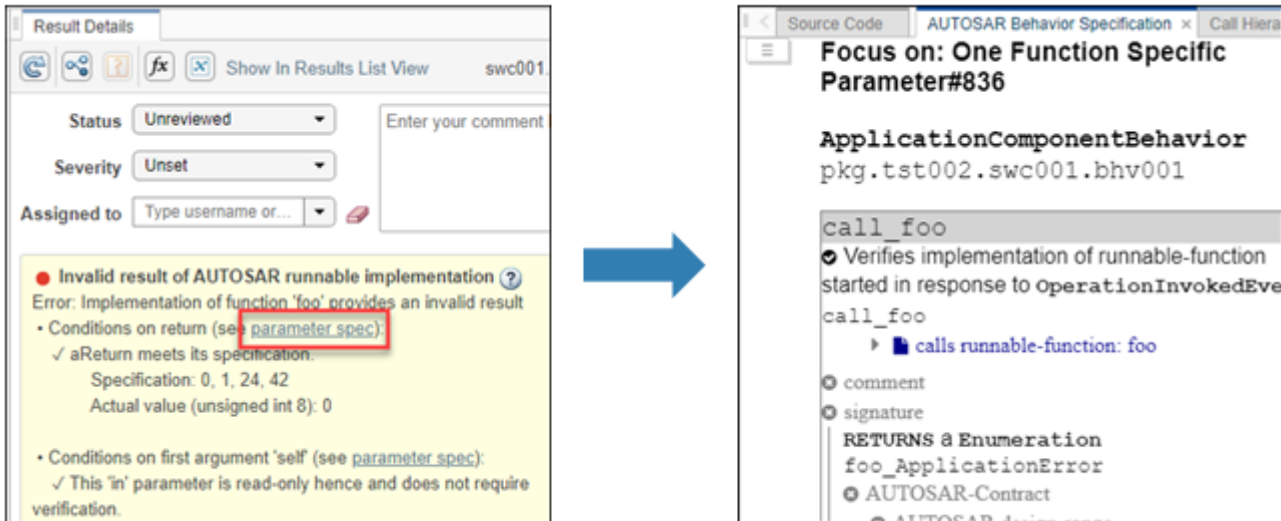
**New Features**

**Bug Fixes**

## Dashboard and Review in Web Browser

### AUTOSAR Support: Navigate from Polyspace findings to AUTOSAR ARXML specifications

In R2020a, if you run Polyspace on AUTOSAR code and upload the results to Polyspace Access, you can navigate from the AUTOSAR finding to the corresponding AUTOSAR behavior specification.



From the **Result Details** pane for an AUTOSAR finding, click **parameter spec** to open the **AUTOSAR behavior specification**. You can use the information in the spec to further investigate the cause of an AUTOSAR finding.

See also Review Polyspace Results on AUTOSAR Code.

### Bug Tracking Tool Support: Create Redmine tickets for Polyspace Access results and assign to developers

In R2020a, Polyspace Access supports integration with the Redmine bug tracking tool. If you use Redmine, after you configure Polyspace Access, you can create a Redmine ticket to track Polyspace findings. The ticket is populated with details of the finding and a link to open that finding in Polyspace Access. You can add the ticket to any existing Redmine project.

Create Redmine ticket for finding #9 (10.1 The value of an expression...)

Project\*

Tracker\*

Subject\* 10.1 The value of an expression of integer type shall not be implicitly converted to a

Description

Implicit conversion of the expression of underlying type 'signed int' to the type 'signed char' that is not a wider integer type of the same signedness.

Found in /local/test/sources/CP\_C\_R2019a/single\_file\_analysis.c

- Go to Polyspace finding here:  
<https://myAccess.company.com:9443/metrics/index.html?a=review&p=3&r=1&fid=9>

Status\*

Priority\*

Assignee

Estimated time

Create Cancel

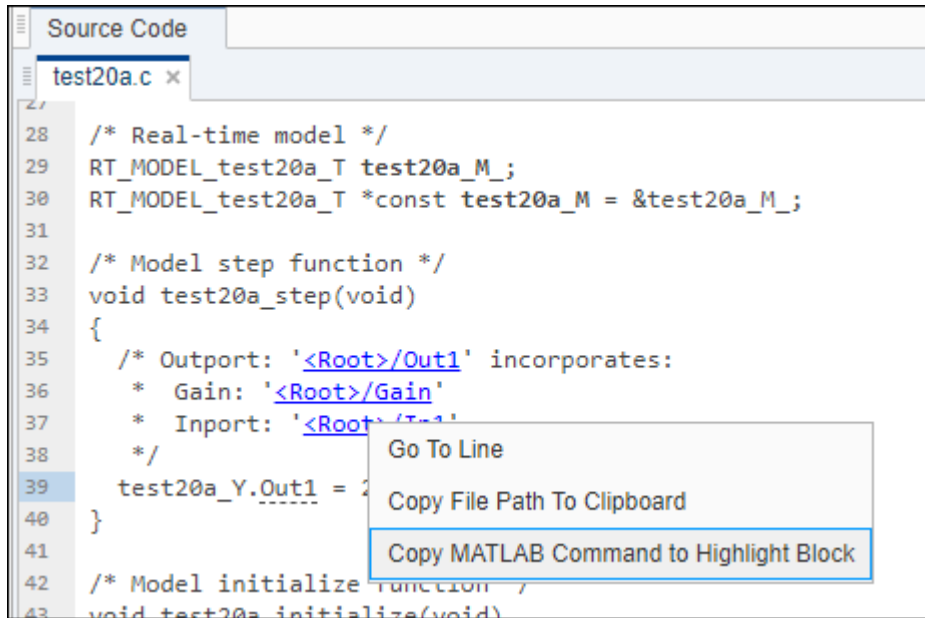
Once you create a ticket, the **Result Details** pane displays a link that you can click to open the ticket in the Redmine interface. See also Track Issue in Bug Tracking Tool.

### Simulink Support: Navigate from generated code in Polyspace Access to blocks in model

In R2020a, if you run Polyspace on generated code in Simulink® and upload the results to Polyspace Access, you can navigate from the source code in Polyspace Access to blocks in the model.

On the **Source Code** pane in the Polyspace Access web interface, links in code comments show blocks that generate the subsequent lines of code. To see the block in the model:

- 1 Right-click a link and select **Copy MATLAB Command to Highlight Block**.



The screenshot shows a MATLAB source code editor window titled "Source Code" with a tab for "test20a.c". The code is as follows:

```
28 /* Real-time model */
29 RT_MODEL_test20a_T test20a_M_;
30 RT_MODEL_test20a_T *const test20a_M = &test20a_M_;
31
32 /* Model step function */
33 void test20a_step(void)
34 {
35     /* Outport: '<Root>/Out1' incorporates:
36      * Gain: '<Root>/Gain'
37      * Inport: '<Root>/In1'
38      */
39     test20a_Y.Out1 = 2;
40 }
41
42 /* Model initialize function */
43 void test20a_initialize(void)
```

A context menu is open over line 39, with the following options:

- Go To Line
- Copy File Path To Clipboard
- Copy MATLAB Command to Highlight Block

This action copies the MATLAB® command required to highlight the block. The command uses the `Simulink.ID.hilite` function.

- 2 In MATLAB, with the model open, paste and run the copied command.

## Results Review: See review history of findings

In R2020a, you can open the **Review History** pane to see all the changes to the review fields of findings with a timestamp and the name of the user who made the change. On the Polyspace Access toolstrip, select **Layout > Show/Hide View**.

Date and Time	User	What Chan	Original value	New value
4/27/2020 3:35:15 PM	ps_user	Comment	Reassigning to project owner	Changing severity to low
4/27/2020 3:35:04 PM	ps_user	Severity	High	Low
4/27/2020 3:34:55 PM	ps_user	Status	To investigate	To fix
4/27/2020 3:34:22 PM	jdoe	Comment	Triage of data race defects	Reassigning to project owner
4/27/2020 3:33:16 PM	jsmith	Severity	Unset	High
4/27/2020 3:33:10 PM	jsmith	Status	Unreviewed	To investigate
4/27/2020 3:33:06 PM	jsmith	Comment		Triage of data race defects

You can use this information to better understand how and why the **Severity** or **Status** of a finding has changed, and retrieve previous comments that were overwritten.

For more information, see Review History.

### Results Review: See the configuration options used for analysis

In R2020a, you can open the **Configuration Settings** pane to view the Polyspace configuration options that were enabled to generate the analysis results. On the Polyspace Access toolbar, select **Layout > Show/Hide View**.

Options	Value
-author	MathWorks
-checkers	BAD_PLAIN_CHAR_USE, BITWISE_NEG, FLOAT_ABSORPTION, FLOAT_CONV_OVFL, FLOAT_OVFL, FLOAT_STD_LIB, FLOAT_ZERO_DIV, INT_CONSTANT_OVFL, INT_CONV_OVFL, INT_OVFL, INT_PRECISION_EXCEEDED, INT_STD_LIB, INT_TO_FLOAT_PRECISION_LOSS, INT_ZERO_DIV, INVALID_OPERATION_ON_BOOLEAN, SHIFT_NEG, SHIFT_OVFL, SIGN_CHANGE, UINT_CONSTANT_OVFL, UINT_CONV_OVFL, UINT_OVFL
-compiler	gnu4.6
-critical-section-begin	BEGIN_CRITICAL_SECTION:Cs10, acquire_sensor:Cs11, acquire_printer:Cs12, acquire_sensor2:Cs13, acquire_printer2:Cs14
-critical-section-end	END_CRITICAL_SECTION:Cs10, release_sensor:Cs11, release_printer:Cs12, release_sensor2:Cs13, release_printer2:Cs14
-date	08/12/2019
-do-not-generate-results-for	all-headers
-dos	true
-entry-points	bug_datarace_task1, bug_datarace_task2, bug_datarace_task3, bug_datarace_task4, bug_deadlock_task1, bug_deadlock_task2, bug_doublelock_task, bug_doubleunlock_task, bug_badlock_task, bug_badunlock_task, bug_dataracestdlib_task1, bug_dataracestdlib_task2, bug_destroylocked_task, corrected_datarace_task1, corrected_datarace_task2, corrected_datarace_task3, corrected_datarace_task4, corrected_deadlock_task1, corrected_deadlock_task2, corrected_doublelock_task, corrected_doubleunlock_task, corrected_badlock_task, corrected_badunlock_task, corrected_dataracestdlib_task1, corrected_dataracestdlib_task2, corrected_destroylocked_task
-lang	C
-misra3	mandatory
-prog	Bug_Finder_Example
-results-dir	D:\Polyspace\Bug_Finder_Example\BF_Result_1
-target	x86_64
-verif-version	1.0



You can use this information to better understand your results. For instance, you might expect to see a certain coding rule violation but the checker for this rule is not enabled. Previously, you had to parse the **Run Log** to see which options and checkers were enabled.

For more information, see Configuration Settings.

## Code Quality Objectives: Customize thresholds used to track the quality of your code

In R2020a, if you use Quality Objectives to track the quality of your code, you can customize the thresholds you use as pass/fail criteria to better align with your company or project requirements. For instance, you can define quality gates to ensure adherence to a specific external coding standard.

The screenshot shows the 'Quality Objectives Settings' page. On the left, a sidebar lists various quality objectives, with 'MISRA C:2004 49/131' selected. The main content area shows the settings for 'MISRA C:2004'. It includes a 'View by Group' and 'View by Category' toggle. Below this is a table with columns for 'Category', 'SQ01', 'SQ02', 'SQ03', 'SQ04', 'SQ05', 'SQ06', and 'Exhaus'. The table lists 14 sub-categories, each with a checkbox and a count of findings.

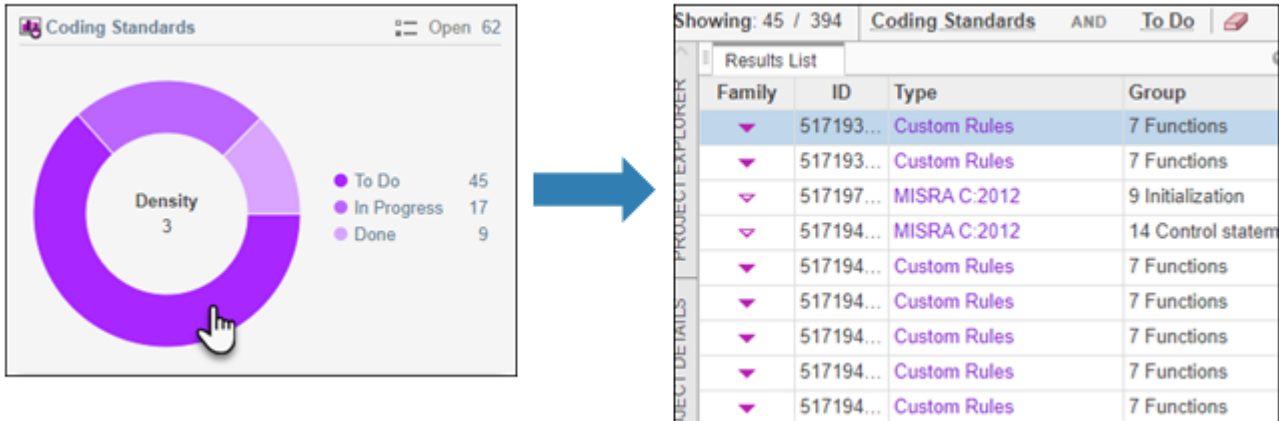
	Category	SQ01	SQ02	SQ03	SQ04	SQ05	SQ06	Exhaus
▾ <input checked="" type="checkbox"/> MISRA C:2004 49/131	–	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▶ <input type="checkbox"/> 1 Environment 0/1	–	–	–	–	–	–	–	<input checked="" type="checkbox"/>
▶ <input type="checkbox"/> 2 Language extensions 0/3	–	–	–	–	–	–	–	<input checked="" type="checkbox"/>
▶ <input type="checkbox"/> 3 Documentation 0/1	–	–	–	–	–	–	–	<input checked="" type="checkbox"/>
▶ <input type="checkbox"/> 4 Character sets 0/2	–	–	–	–	–	–	–	<input checked="" type="checkbox"/>
▶ <input checked="" type="checkbox"/> 5 Identifiers 1/7	–	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▶ <input checked="" type="checkbox"/> 6 Types 1/5	–	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▶ <input type="checkbox"/> 7 Constants 0/1	–	–	–	–	–	–	–	<input checked="" type="checkbox"/>
▶ <input checked="" type="checkbox"/> 8 Declarations and definitions 3/12	–	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▶ <input checked="" type="checkbox"/> 9 Initialization 2/3	–	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▶ <input checked="" type="checkbox"/> 10 Arithmetic type conversions 2/6	–	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▶ <input checked="" type="checkbox"/> 11 Pointer type conversions 4/5	–	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▶ <input checked="" type="checkbox"/> 12 Expressions 7/13	–	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▶ <input checked="" type="checkbox"/> 13 Control statement expressions 6/7	–	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>
▶ <input checked="" type="checkbox"/> 14 Control flow 4/10	–	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>

To make changes to the quality objectives settings, you must have a role of **Administrator**.

Previously, you could track the quality of your code only against (Polyspace Bug Finder Access)predefined thresholds. See Customize Software Quality Objectives.

## Project Dashboard: Open results by clicking Dashboard charts

In R2020a, you can click a section of a pie chart or the legend of a pie chart to open the corresponding findings in the **Results List** and more easily narrow the scope of your review.




## Bug Tracking Tool Support: Manage tickets for multiple findings

In R2020a, if you create a bug tracking tool ticket in Polyspace Access, you can select multiple findings that you associate with the ticket. If a ticket already exists, you can add that ticket to additional findings or you can detach the ticket from findings that are associated with the ticket.

Previously, you could create a ticket for only one finding at a time and you could not detach a ticket from a finding.


For more information, see [Track Issue](#) in Bug Tracking Tool.

## Results Review: View error call graph

In R2020a, if you review **Run-Time Checks**, click the  icon to open the **Error Call Graph** pane.

The pane displays the call sequence that leads to the detected finding. Click a node on the graph to navigate back to the source code.

## Results Review: View variable access graph

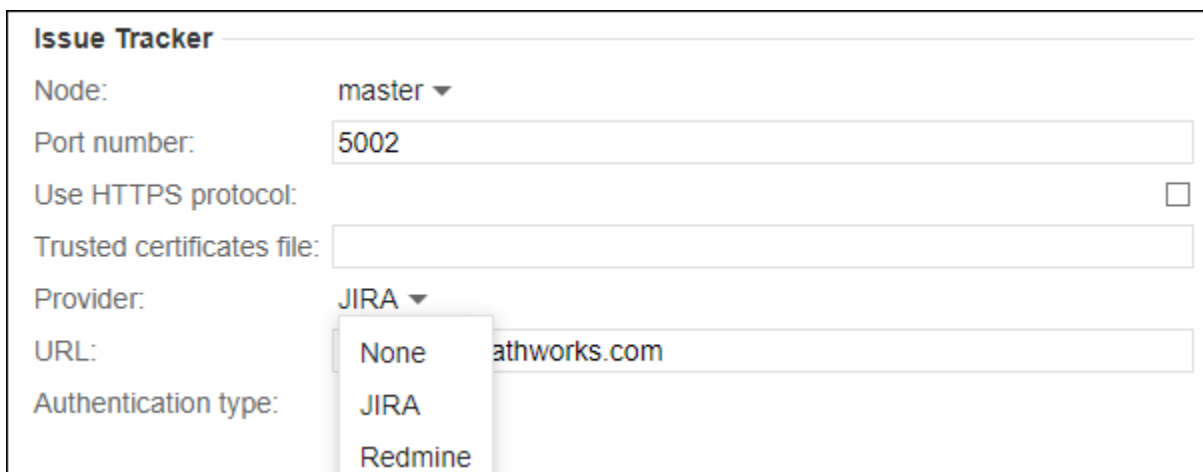
In R2020a, if you review **Global Variables** findings, click the  icon to open the **Variable Access Graph** pane.

The pane displays a graphical representation of the access operations on global variables. Click a node on the graph to navigate back to the source code at the location of calling and called functions.

## Installation

### Installation and Configuration: Issue Tracker service

In R2020a, use the new **Issue Tracker** service to configure Polyspace Access to integrate with the Jira software or Redmine bug tracking tools.



The screenshot shows the 'Issue Tracker' configuration form. The fields are as follows:

Node:	master ▼
Port number:	5002
Use HTTPS protocol:	<input type="checkbox"/>
Trusted certificates file:	
Provider:	JIRA ▼
URL:	athworks.com
Authentication type:	JIRA

The 'Authentication type' dropdown menu is open, showing the following options: None, JIRA, and Redmine.

See Configure the **User Manager** and **Issue Tracker**.

### Installation and Configuration: Change in default location of Polyspace Access data volume and working directories

In R2020a, the default location of the working directories of the Polyspace Access **Web Server** and **ETL** services and of the data volume is inside the folder where you unzipped the Polyspace Access ZIP file, under the polyspace folder.

Previously, the working directories of the **Web Server** and **ETL** were stored in the temporary files folder of your system (/tmp on Linux or %TEMP% on Windows). The data volume was stored under /var/lib/docker/volumes on Linux.



# R2019b

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**Version: 2.1**

**New Features**

**Bug Fixes**

## Installation

### **User Authentication: Use LDAP search filters to restrict number of users to authenticate**

In R2019b, if you use your organization's Lightweight Directory Access Protocol (LDAP) to authenticate users, you can filter for and load a subset of users from your LDAP database when you start Polyspace Code Prover™ Access™. Previously, you loaded all LDAP users listed under the **LDAP base** that you specified when you started Polyspace Code Prover Access.

To filter the LDAP users, use the new **LDAP search filter** field in the Cluster Operator settings for the **User Manager** service. For more information, see Use Your Organization LDAP.

### **User Management: Update list of users from LDAP database or LDIF file**

In R2019b, if you remove users from your organization's Lightweight Directory Access Protocol (LDAP) database or from the Polyspace Access embedded LDAP LDIF file, you can update the list of users stored in the Polyspace Access database. Previously, users that were removed from the LDAP database or from the LDIF file were still visible in the list of users you selected when assigning findings or managing project permissions.

To update the list of users stored in the Polyspace Access database, append `/users/list/removed` to the URL that you use to Open the Polyspace Access Web Interface. Only an **Administrator** can perform this operation. For more information, see Manage LDAP Users in Polyspace Access.

# R2019a

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**Version: 2.0**

**New Features**

## Dashboard and Review in Web Browser

### **Project Dashboard: Track progress of code quality via Polyspace results**

**Summary:** In R2019a, you can track the progress of the code quality of your projects using the new intuitive Polyspace Code Prover Access **DASHBOARD**. When an analysis run is uploaded to the Polyspace Access database, the dashboard updates to give a snapshot of all the available findings, including a progress trend for number of findings compared to previous runs.



Project Overview

Summary

Code-Prover\_Example-Trends\_pre (Code Prover)


#### Open Issues

Open	97
New	7
Assigned To Me	0
Unassigned	97

#### Code Metrics

Sub-project(s)	0
Number of Files	6
Number of Lines Without Comment	429
Cyclomatic Complexity	6

#### Quality Objectives



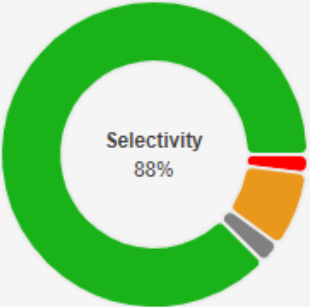
6.0%

Threshold Exhaustive

Remaining 89

#### Run-time Checks

Open 29

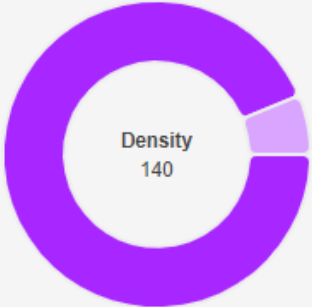


**Selectivity**  
88%

Red	5
Orange	20
Gray	6
Green	219

#### Coding Standards

Open 60

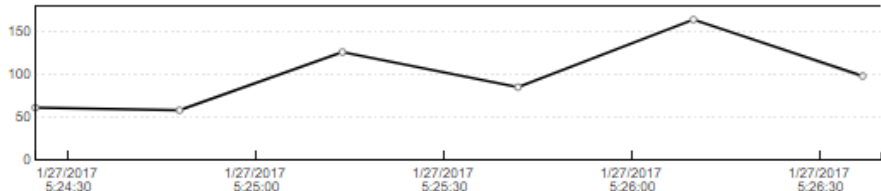


**Density**  
140

To Do	60
Done	4

#### Trends

Number of open findings over time



● Open

#### Details

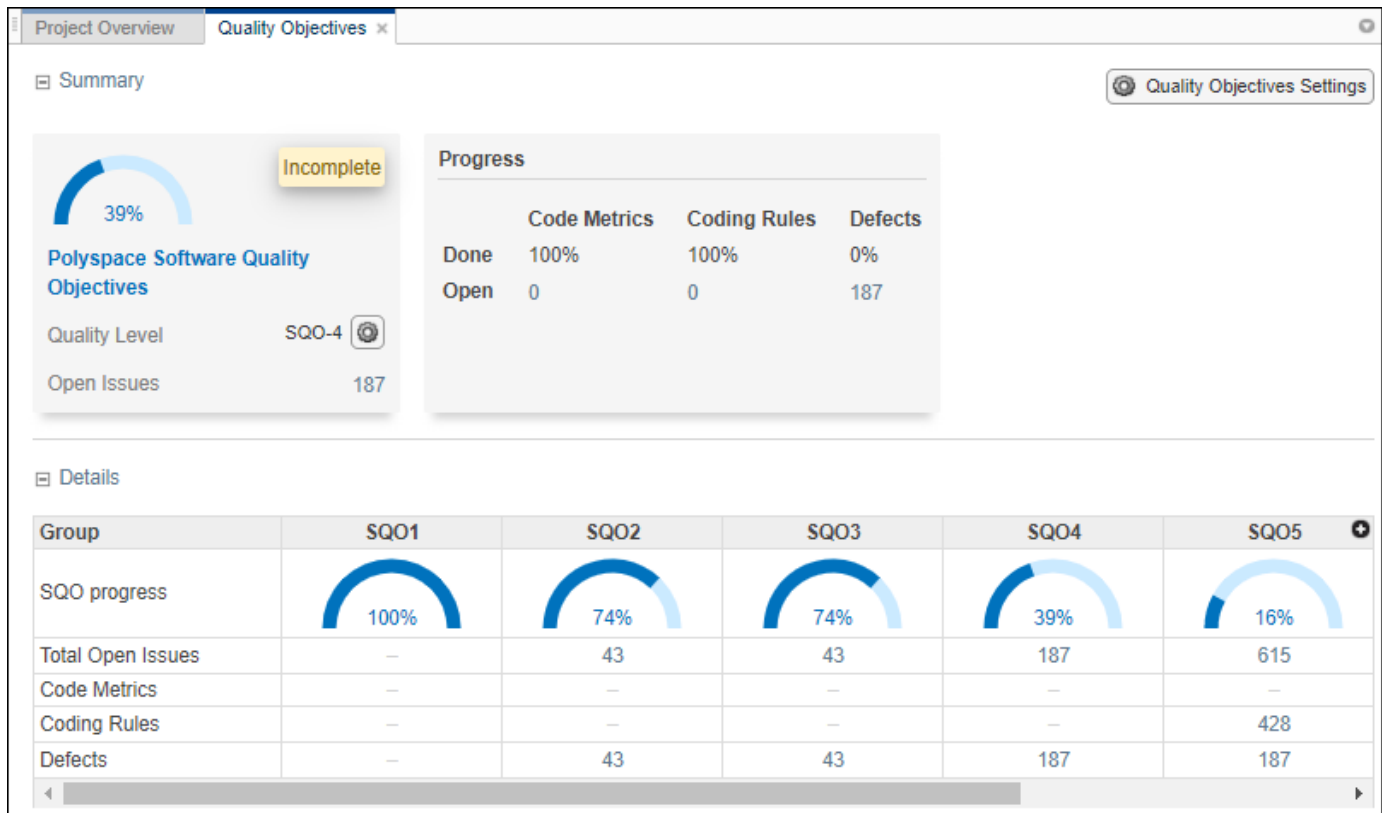
Name	Total	To Do	In Progress	Done
● Red	5	4	-	1
× Gray	6	6	-	-
? Orange	20	19	-	1
✓ Green	219	-	-	-
▽ Coding Standards	64	60	-	4
⊠ Global Variables	23	8	-	-

**Additional Benefits:**

- *Prioritize reviews:* See new and open issues that have not been fixed or justified, then open a detailed results list for just those issues. You can drill down on a set of findings filtered by new, open, unassigned, by family of findings, or by file.
- *Aggregate results for multiple projects:* If your team works on multiple projects, you can move all of those under an umbrella project and view a snapshot of the code quality for all your team's projects.
- *Authenticate client access:* The web interface is behind a login. Only users with a Polyspace Code Prover Access license and the appropriate credentials can view the dashboard from their web browser.

**Project Dashboard: Compare Polyspace Code Prover results against Software Quality Objectives**

**Summary:** In R2019a, check the quality of your code against pre-defined quality objective thresholds using the new Polyspace Code Prover Access **Quality Objectives** dashboard web interface. Use the thresholds to establish PASS/FAIL criteria for the code quality of your projects. For instance, the dashboard displays the progress and remaining open issues across thresholds and categories of findings. Use the available dropdown menu to select a threshold and see a more detailed view of completion by category of finding.

**Additional Benefits:**

- *Achieve better quality code:* The dashboard lets you drill down to categories of open issues for each threshold. Click a cell in the table to open a list of findings you need to address to pass a given quality objective threshold.

## Collaborative Review Support: Review Polyspace Code Prover results and source code in web browser

**Summary:** In R2019a, review Polyspace analysis findings and view the findings in your source code using the new Polyspace Code Prover Access **REVIEW** web interface. You do not need to install a Polyspace product on your machine to open and review analysis results.

Showing: 395 / 395

Family	ID	Type	Group	Check
● *	58538	Red Check	Static memory	Illegally deref
● *	58603	Red Check	Other	Invalid use of
● *	58686	Red Check	Control flow	Non-terminat
● *	58701	Red Check	Static memory	Out of bound
● *	58845	Red Check	Control flow	Non-terminat
× *	58534	Gray Check	Data flow	Unreachable
× *	58627	Gray Check	Data flow	Unreachable
× *	58681	Gray Check	Data flow	Unreachable
× *	58725	Gray Check	Data flow	Unreachable
× *	58767	Gray Check	Data flow	Unreachable
× *	58847	Gray Check	Data flow	Unreachable
?	58543	Orange Check	Static memory	Illegally deref
?	58570	Orange Check	Numerical	Division by ze
?	58582	Orange Check	Numerical	Overflow
?	58585	Orange Check	Numerical	Overflow
?	58589	Orange Check	Numerical	Overflow
?	58597	Orange Check	Numerical	Overflow
?	58599	Orange Check	Data flow	Non-initialize
?	58601	Orange Check	Other	User assertio
?	58626	Orange Check	Data flow	Non-initialize
?	58674	Orange Check	Data flow	Non-initialize
?	58675	Orange Check	Data flow	Non-initialize
?	58676	Orange Check	Static memory	Illegally deref
?	58707	Orange Check	Data flow	Non-initialize
?	58712	Orange Check	Other	User assertio
?	58766	Orange Check	Numerical	Overflow
?	58773	Orange Check	Static memory	Out of bound
?	58778	Orange Check	Data flow	Non-initialize
?	58783	Orange Check	Other	User assertio
?	58785	Orange Check	Data flow	Non-initialize
?	58790	Orange Check	Other	User assertio
?	58818	Orange Check	Numerical	Overflow
?	58833	Orange Check	Numerical	Overflow
▼ *	58879	MISRA C:2012	9 Initialization	9.1 The valu
▼ *	58880	MISRA C:2012	9 Initialization	9.1 The valu

Result Details: example.c / Pointer\_Arithmetic()

Status: Unreviewed  
Severity: Unset  
Assigned to: Type username or...  
Track issue: Create Ticket

● Illegally dereferenced pointer  
Error: pointer is outside its bounds  
Dereference of local pointer 'p' (pointer to int 32, size: 32 bits):  
Pointer is not null.  
Points to 4 bytes at offset 400 in buffer of 400 bytes, so is outside bounds.  
Pointer may point to variable or field of variable:  
'array', local to function 'Pointer\_Arithmetic'.

Event	File	Scope
1	Entering function 'RTE'	main.c main()
2	Entering function 'Point...	example.c RTE()
3	● Illegally dereference...	example.c Pointer_Arithmetic()

Source Code

```

example.c x single_file_analysis.c x
94 for (i = 0; i < 100; i++) {
95     *p = 0;
96     p++;
97 }
98
99 if (get_bus_status() > 0) {
100     if (get_oil_pressure() > 0) {
101         *p = 5; /* Out of bounds */
102     } else {
103         i++;
104     }
105 }
106
107 i = get_bus_status();
108
109 if (i >= 0) {*(p - i) = 10;}

```

### Additional Benefits:

- *Facilitate collaborative review:* The web interface streamlines the review efforts of your team. For instance:

- During a team meeting, findings can be assessed and assigned to developers.
- Developers can log into the web interface to review findings assigned to them, and determine whether to justify the findings or fix them.
- A project manager can track the progress of the review by filtering the list of results for findings that are still open.
- *Authenticate client access:* The web interface is behind a login. Only users with a Polyspace Code Prover Access license and the appropriate credentials can view the results from their web browser.

## Collaborative Review Support: Share Polyspace Code Prover results using web links

**Summary:** In R2019a, you can right-click an analysis result in the Polyspace Code Prover Access interface to obtain a URL that you can share with other team members. The link that you provide opens the Polyspace Code Prover Access interface and displays the finding along with the corresponding source code.

The image shows two screenshots of the Polyspace Code Prover Access interface. The left screenshot shows a table of findings with a context menu open over the row with ID 550320. The right screenshot shows the detailed view of this finding, including its status, severity, and the source code snippet.

Family	ID	Type	Group	Check
●	549792	Red Check	Static memory	Illegally
●	549935	Red Check	Other	Invalid
●	550104	Red Check	Control flow	Non-ter
●	550134	Red Check	Static memory	Out of t
●	550320	Red Check	Control flow	Non-ter
×	549784	Gr	low	Unreact
×	549983	Gr	low	Unreact
×	550094	Gr	low	Unreact
×	550188	Gray Check	Data flow	Unreact

Context menu options for ID 550320:

- Show only: "Red Check"
- Filter out: "Red Check"
- Copy finding URL to clipboard

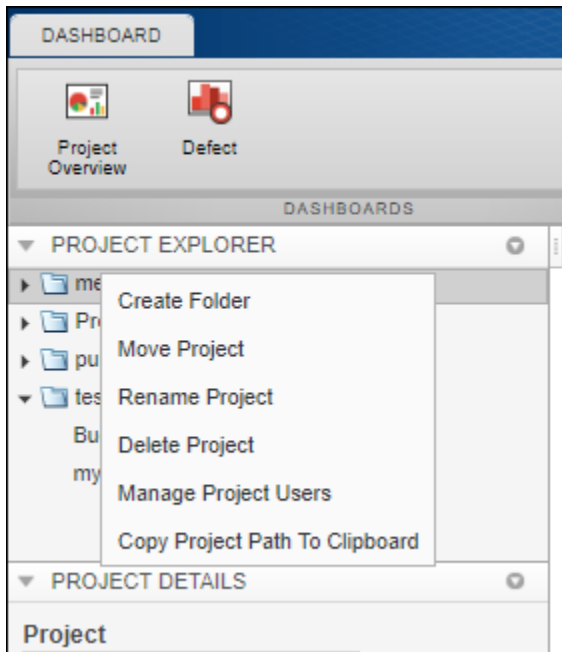
Right screenshot details:

- Showing: 1 / 1090
- Family: 550320
- ID: 550320
- Type: Red Check
- Group: Control flow
- Status: Unreviewed
- Severity: Unset
- Assigned to: Type username or...
- Track issue: Create Ticket
- Non-terminating call: The called function example Recursion (in t) contains an error or does not terminate.
- Source Code:
 

```
example.c
140
141     Recursion(depth);
142 }
143
144
145 static void Recursion_caller
146 {
147     int x = random_int();
148
149
150     if ((x > -4) && (x < -1))
151         Recursion(6x);
152 }
```

## Project Authorization Management: Create and enforce authorization policies for access to project

**Summary:** In R2019a, you can manage project users in Polyspace Code Prover Access by right-clicking a project in the **PROJECT EXPLORER** and assigning roles to member of your team. The roles authorize or forbid users from viewing projects.

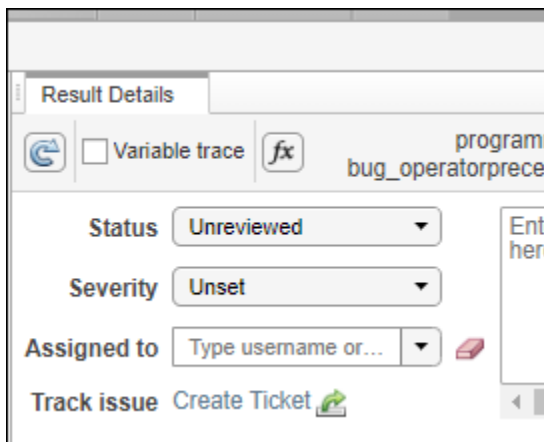


#### Additional Benefits:

- *Restrict access to your source code:* Use the authorization policy to restrict who can view the source code you upload with your analysis results.
- *Display relevant projects only:* When they log in to Polyspace Access, users can only see projects for which they are administrators, owners, or contributors. Use the authorization policy so that team members only see projects that they are working on.

## Bug Tracking Tool Support: Create JIRA issues for Polyspace Code Prover results and assign to developer

**Summary:** In R2019a, Polyspace Code Prover supports integration with the JIRA software. If you have an instance of the JIRA software, after you configure Polyspace Code Prover, you can create a JIRA ticket to track Polyspace findings. The ticket is populated with details of the finding and a link to open that finding in Polyspace Access. You can add the ticket to any existing JIRA project.



Once you create a ticket, the **Result Details** pane in the Polyspace Code Prover web interface displays a link to the corresponding JIRA issue.