AdaCore
TECH DAYS

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GNAT Pro Update

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Release Schedule

October: Preview release	Oct 2018: 19.0	*Continuous Release Area*
February: **Major release**	**Feb 2019: 19.1**	
July: **Corrective release**	**July 2019: 19.2**	
	Oct 2019: 20.0	
	Feb 2020: 20.1	
	July 2020: 20.2	

GNAT

GNAT Pro 19 overview

62 platforms (57 cross, 5 native)

Support for Ada 83, 95, 2005, 2012, 202x, SPARK

GCC 6.x ➠ GCC 7.x

Binutils: 2.28.51 ➠ 2.30.52

GDB 7.10 ➠ GDB 8.2

MinGW 3.1.0 ➠ 5.0

QEMU 2.8.1 ➠ 2.12

GNAT Pro Ports

7 new ports, 11 new configurations

```
riscv64-elf
aarch64-elf-{linux,windows}64
aarch64-linux-linux64
aarch64-qnx-{linux,windows}64
aarch64-vx7-{linux,windows}64
ppc-linux-windows
x86-lynx178elf-{linux,windows}64
```

GNAT on VxWorks

Simplify mixing Ada/C++

Better integration of GNAT in Workbench (even for Ada-only projects)

Add support for Wind River's LLVM

Libadalang integration

Libadalang available to customers and supported

GNATpp now based on libadalang

faster and doesn't require closure, support for simple preprocessor directives

More to come

Other GNAT Highlights

Spectre V2 mitigation (-mindirect-branch and -mfunction-return switches)

Link time speedup on Windows for large executables with multiple DLLs

Full Ada 2012 syntax for C/C++ binding produced by -fdump-ada-spec

Improved suppression of access-before-elaboration checks and warnings

AWS improvements

- Enhanced interoperability with Apache CXF for document/literal WSDL and generated SOAP messages.
- Improved session handling security by using a configurable private hash.

IDEs

GPS

AdaCore's main IDE

Stability and speed

GPS

Learn view

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GPS

Libadalang view

Improved integration with debugger

- new Registers view
- set values in Variables view
- lazy retrieve of callstack information

Improved Scenario view

- untyped variables
- variables in aggregated projects

Revamp and simplification of color preferences + theme support

GNATbench

Eclipse Plug-In for Ada

Support for Eclipse 4.8 Photon, Wind River WorkBench 4.15

- *Eclipse SimRel 2018-09 under test*

Improved Ada/C++ exception handling on VxWorks 7

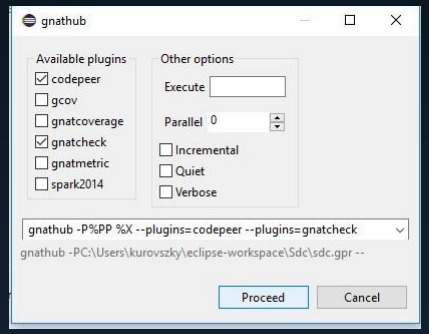
Better integration with WorkBench

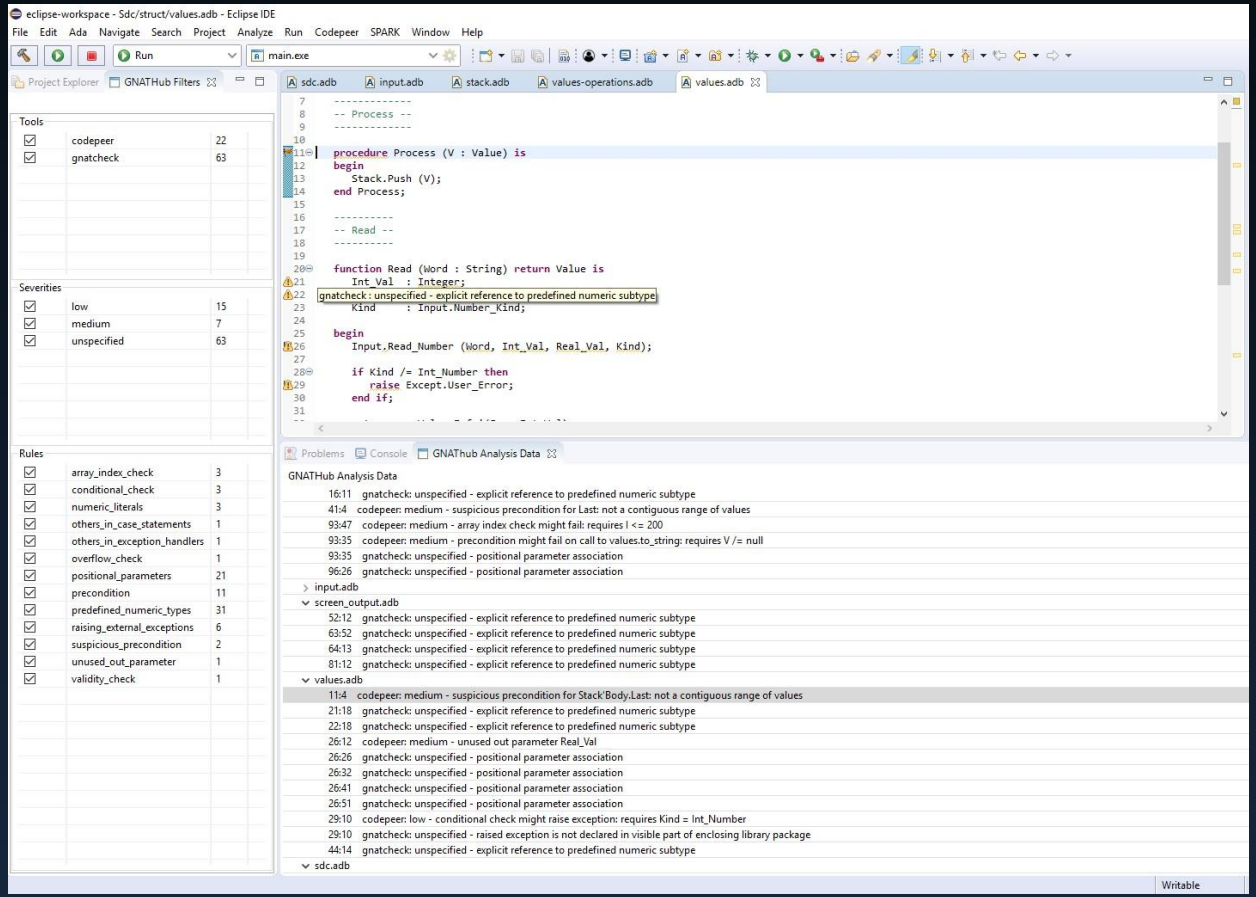
- improve support for compiler with GNAT Pro C
- full access to environment managed by WorkBench

New UI for runtime selection

GNATbench

GNAThub integration





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GNATdoc

Documentation Generator

Support for generics

GNATdashboard

GNAT Tools Aggregation and Visualization

Support for SonarQube 6.7 LTS

New Web UI

Tools

GPRbuild

Multipurpose GNAT builder

Removed compile command line length limitation on Windows

Recompile if GNAT toolchain version changes between compiles

Propagation of static SAL link dependencies upstream

GNATcheck

Qualifiable Coding Standard Checker

Many new GNATcheck rules implemented & qualified

GNATcoverage

Qualifiable Code Coverage

Improved handling of pragmas wrt statement coverage

Support for programs with compressed debug info section

In Our Labs

New Elaboration Algorithm

Taking complete call graph into account

Will solve porting efforts

GNAT Pro C++

Cross Linux

VxWorks 6

VxWorks 7

GNAT LLVM

Working on plugging GNAT front-end with LLVM code generator

GNATcoverage

Support for source instrumentation to provide coverage everywhere

GPR

Active work on GPR2 library and tools

Libadalang and Tools

Libadalang will replace all source navigation, cross reference and refactoring capabilities in GPS and GNATbench

GNATstub, GNATmetric, GNATcheck are also being transitioned

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