

# OpenEdge Technologie Webinare

Webinare 2020



## Continuous Integration und Continuous Delivery für OpenEdge

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# OpenEdge Technologie Webinare in DACH

Termin	Titel	Beschreibung
21. April	OpenEdge 12.2	Am 2. April 2020 wird OpenEdge 12.2 freigegeben. Ein Überblick über die Neuerungen, unter anderem zur Performance der ABL, der Datenbank und der DataServer und dem neuen Product Lifecycle.
19. Mai	SQL und Co.	Der Zugriff auf Anwendungsdaten für Analyse und Reporting ist ein zentrales Thema. Wir möchten die Werkzeuge und Schnittstellen, die OpenEdge zur Verfügung stellt, im Überblick vorstellen.
16. Juni	OpenEdge Schnittstellen für Web und Mobile Apps	Der Progress Application Server für OpenEdge bietet universelle Schnittstellen für den Zugriff von Webanwendungen und Apps auf die server-seitige OpenEdge Anwendung. Welche Optionen stehen Ihnen zur Verfügung?
8. Juli	<b>Continuous Integration und Continuous Delivery für OpenEdge</b>	<b>Für den Prozess der Software-Erstellung (Build Process) mit OpenEdge stehen Werkzeuge zur Automatisierung zur Verfügung. Das gilt auch für die Auslieferung von Updates in den Progress Application Server für OpenEdge. Diese Webinar gibt einen Einblick in die Möglichkeiten.</b>
15. September	Web-FrontEnds erstellen mit UniteUX	Progress UniteUX ist ein Werkzeug zum schnellen Erstellen von Responsive WebAnwendungen. Wir stellen den Stand der Entwicklung vor.
6. Oktober	Authentifizierung und Autorisierung mit PASOE	Der Progress Application Server für OpenEdge (PASOE) verwendet bekannte Technologien, um Authentifizierung und Autorisierung zu implementieren. Sie arbeiten auch gut mit externen Komponenten wie LDAP Directory Servern und Secure Token Servern zusammen. Ein Einstieg ins Thema.

Diese Termine können sich ändern. Aktuell immer hier auf der Homepage der Webinar-Serie.

<https://www.progress.com/campaigns/de/openedge/technologie-webinare-2020>

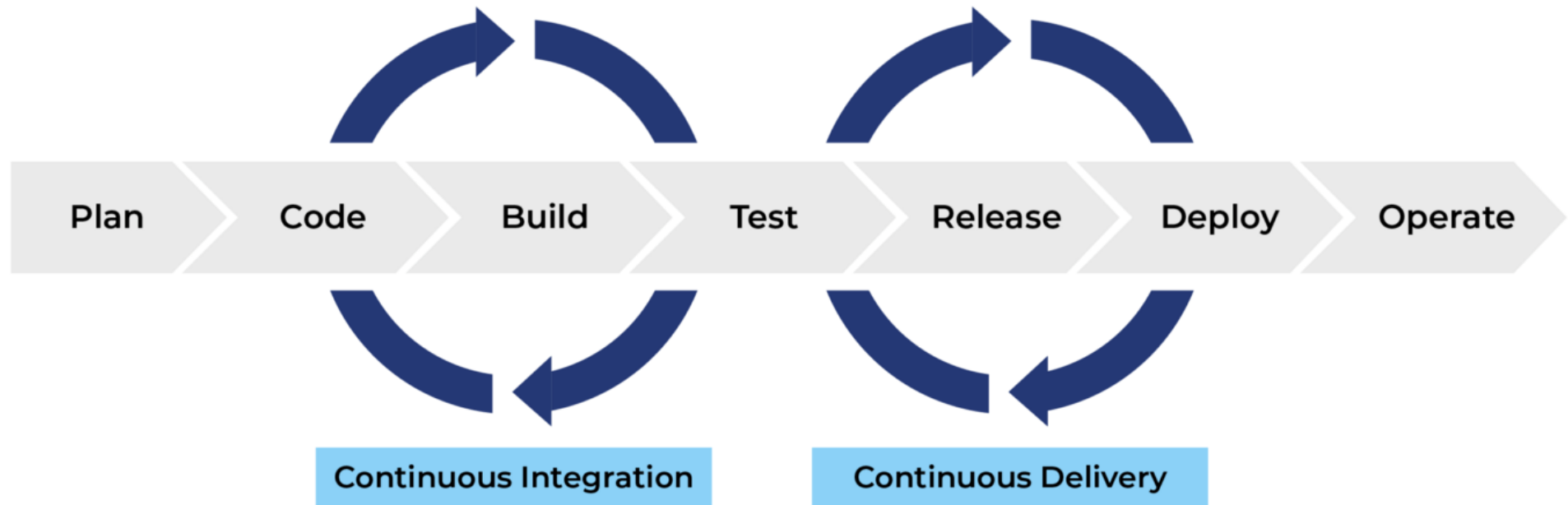
Weitere Webinare: <https://www.progress.com/campaigns/openedge/oe-emea-openedge-live-talks-webinar>

# Agenda

- Continuous Integration und Continuous Deployment im Überblick
- CI mit OpenEdge
- CD mit OpenEdge

# Was ist CI & CD

## CI/CD



[https://de.wikipedia.org/wiki/Kontinuierliche\\_Integration](https://de.wikipedia.org/wiki/Kontinuierliche_Integration)

# Warum Continuous Integration?

## Effizienter zusammenarbeiten

- höhere Transparenz und bessere Planbarkeit
- Automatisierung reduziert Aufwand

## Wachsende Komplexität beherrschen

- Fehler früh erkennen
- Konsistente Versionsstände sicherstellen.

# Warum Continuous Delivery?

## Schneller liefern

- Kürzere Release-Zyklen ermöglichen.
- Features schneller dem Kunden geben.
- Schneller reagieren und liefern können.

## Kosten reduzieren

- Automatisierung hilft Kosten zu senken
- Standardisierung schont Ressourcen und steigert die Wettbewerbsfähigkeit.

# Continuous Integration Schritte

## Qualitätskontrolle durch den Entwickler und Peer

- Prüfen der Code Qualität
- Test der Änderungen auf Funktion, Fehler und Konformität

## Interne Übergabe zum Team

- Übergabe ins Source Code Repository (Merge, Write)
- Builden
- Testen

## Verteilen

- Übergabe in Release Repository
- Replizieren in die lokalen Entwicklerumgebungen

# Continuous Deployment Schritte

## Neues Release erzeugen

- Ausgewählte Neuerungen und Fixes in bestehende Branches mergen
- Release auskoppeln

## Auslieferungspakete erstellen

- Code in Libraries und Containern
- Datenbank Anpassungen
- OpenEdge Updates

## Produktionsumgebung

- Updates installieren (online / offline)

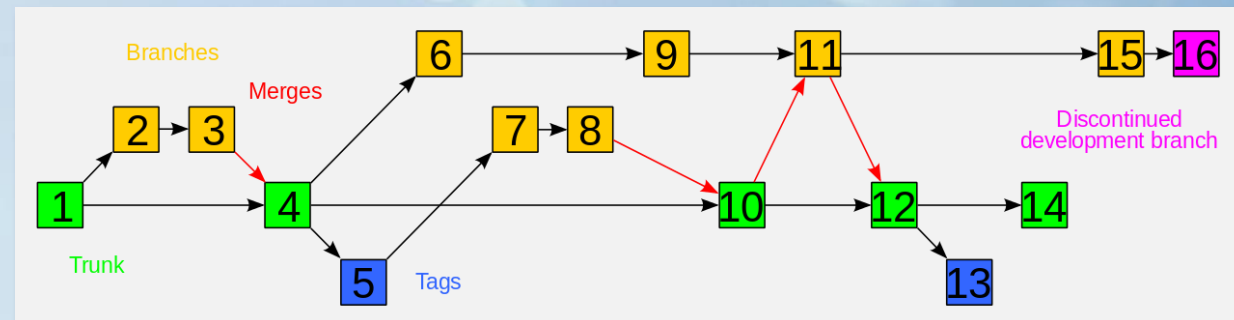
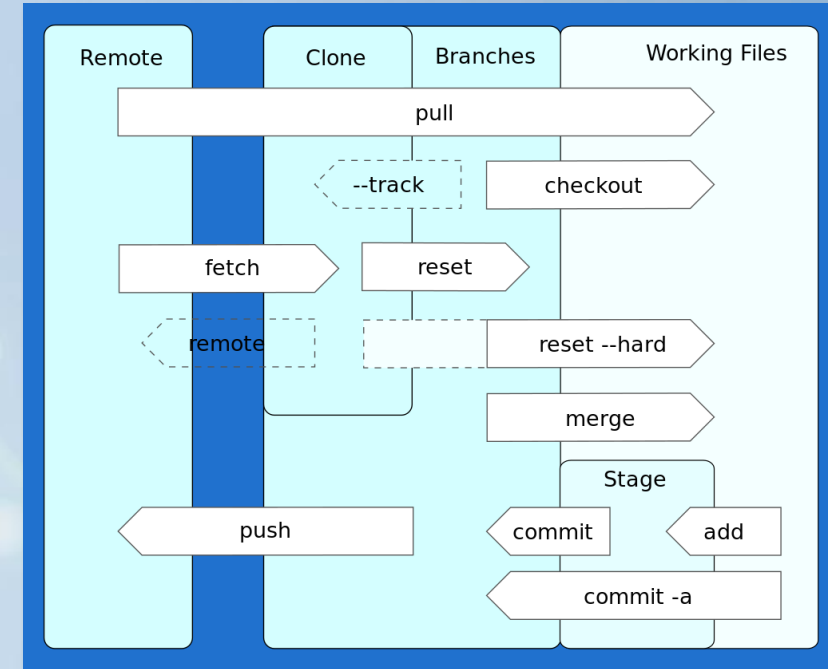
# Welche Versionsverwaltungen werden genutzt?

## Aspekte

- Pessimistisch / Optimistisch
- Zentral / Verteilt
- On-Premise / Cloud
- Integration mit anderen Tools
  - Entwicklungstools
  - CI Pipeline, Integrations-Tests

## Einige Tools

- Roundtable Software
- Git (GitHub, GitKraken), Mercurial, Subversion, Perforce



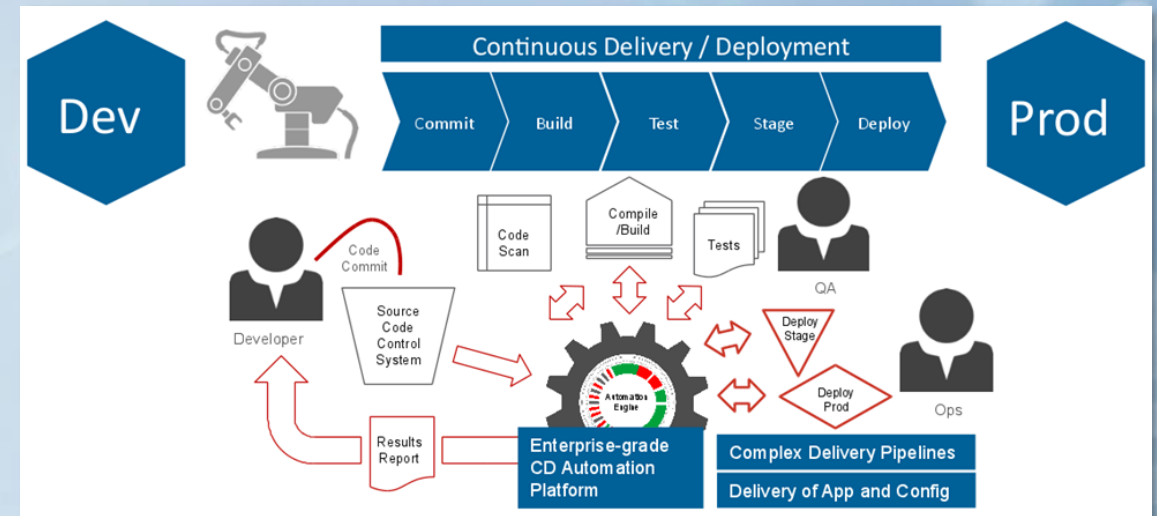
# Welche Build Systeme werden genutzt?

## Aspekte

- Nur Build, oder auch Deployment und Release Management?
- Unterstützte Sprachen? ABL?
- Integration mit VCS, Test-Frameworks, Ticket-System, Wikis

## Einige Tools

- Hudson & Jenkins, Maven, Ant und Gradle
- Team Foundation Server, TeamCity, Bamboo
- Progress Compile Tools, UBPF



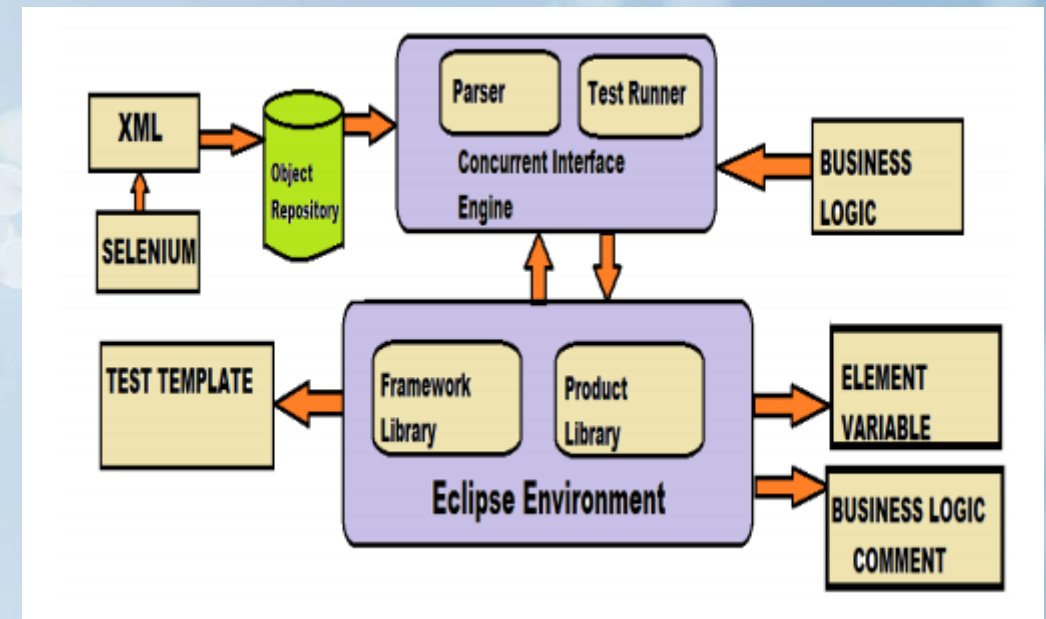
# Welche Test-Werkzeuge werden genutzt?

## Aspekte

- Art der Tests
- Manuell / Automatisch
- Integration: Aufrufbar aus Build Tool
- Aufwand der Pflege der Tests und der Testumgebung


## Einige Tools


- Modul-Tests: ABLUnit, Jasmine
- Webservice Testing: SoapUI, Postman
- Performance: jMeter, OE Profiler
- UI Test mit Recorder: Tricentis, Telerik Test Studio




Progress Information Hub > OpenEdge >

# Automate Development and Deployment


All Products ▾ Search 

 **Get started**


- Learn about CI/CD with OpenEdge

 **Build**


- Coding practices
- Build with Apache Ant
- Build with Gradle
- PCT
- Latte

 **Package**


- Package ABL applications
- Create an OpenEdge Application Archive
- Create containers

 **Test**

- Learn about testing concepts

 **Deploy**

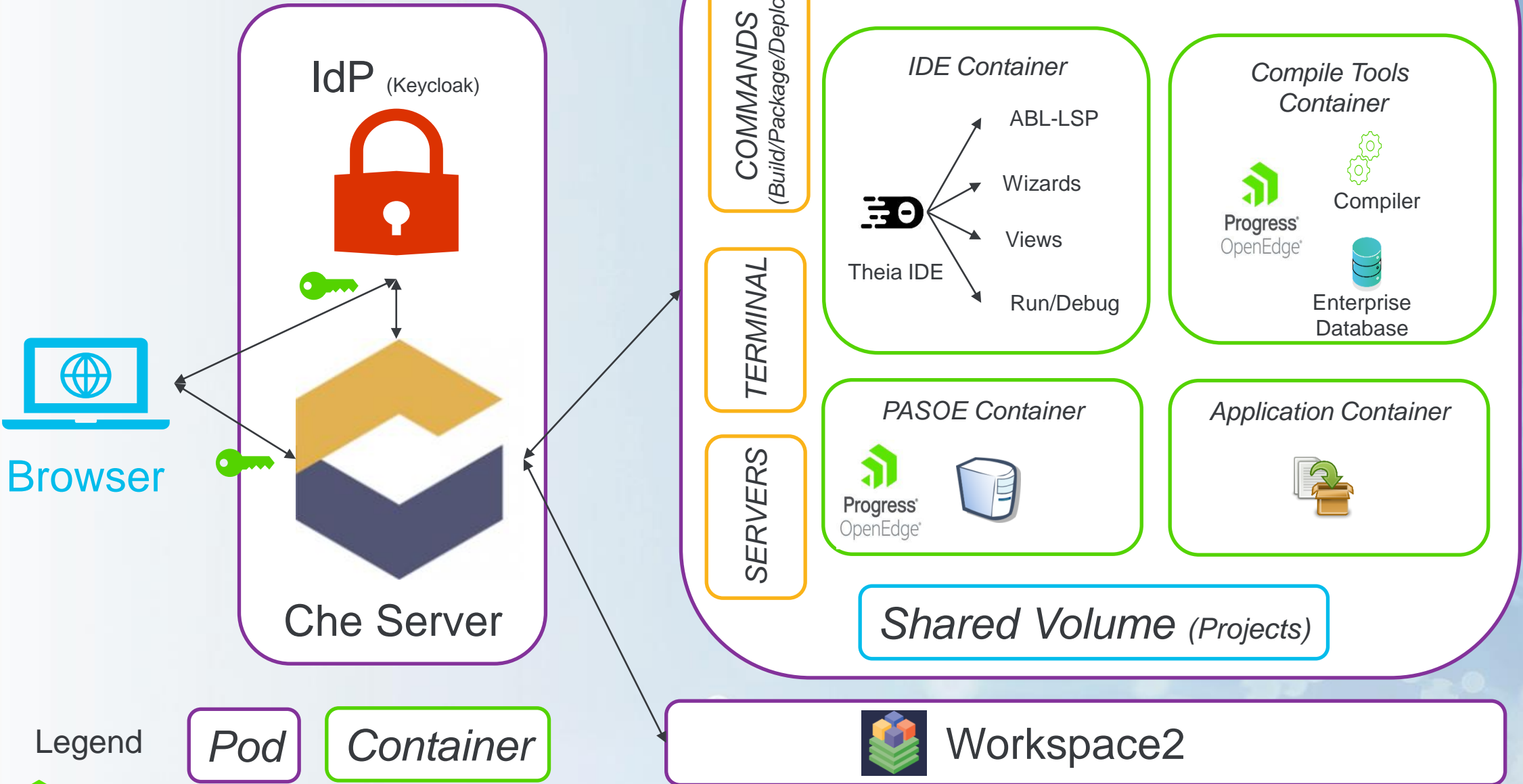
- Learn about deployment strategies
- Deploy using TCMAN import

 **Tools**

- Progress Developer Studio for OpenEdge
- PCT
- Latte
- SonarQube

<https://docs.progress.com/category/openedge-automate-dev-and-deploy>

# Hub for DevOps



Legend

Pod

Container

# **Continuous Integration mit OpenEdge**

# Source Code Qualität sichern

- ProLint, <https://github.com/jcaillon/prolint>, OpenSource
- ProParse, verschiedene Forks, unter anderem Riverside Software
- Code Analyser for ABL (seit OpenEdge 12.0)
  - Riverside Plugin für SonarQube zur Code Analyse von ABL Code
  - Sonarsource Eclipse Plugin “SonarLint”, mit 6 ABL Rules in PDSOE 12.0
  - Rund 70 ABL Rules entwickelt von Gilles Querret, Riverside Software
  - <https://github.com/Riverside-Software/sonar-openedge>
- SonarSource <https://www.sonarsource.com/>
  - SonarQube <https://www.sonarqube.org/> , Community Edition
  - Integration mit Build Systemen:  
<https://docs.sonarqube.org/latest/analysis/overview/>

1 / 1 issues

wDump.w

**First element of expression is not aligned with previous one**

Bug

1 of 1 shown

```

1855 patri... FIND ttField WHERE ttfield.cFullName = hField:NAME NO-ERROR.
1856 patri... IF NOT AVAILABLE ttField THEN NEXT #FieldLoop.
1857 patri...
1858 patri... DO iExtent = (IF hField:EXTENT = 0 THEN 0 ELSE 1) TO MAXIMUM(0,hField:EXTENT):
1859 patri...
1860 patri... ASSIGN
1861 patri... cData = IF tbUseCustomizedFormats
1862 patri... THEN TRIM(ST
1863 patri... ELSE hField:
1864
1865 /* ** Value X cannot be
1866 IF ERROR-STATUS:GET-NUMB
1867 ASSIGN cData = TRIM(ST
1868 patri...
1869 cData = getEscapedData("

1870
1871 patri... PUT STREAM strDump UNFORM
1872 patri... SKIP SUBSTITUTE('<td>&
1873 patri... END.
1874 patri...
1875 patri... PUT STREAM strDump UNFORMATT
1876 patri...
1877 patri... END. /* pumpDataLoop */
1878 patri...
1879 patri... PUT STREAM strDump UNFORMATTED
1880 patri... OUTPUT STREAM strDump CLOSE.
1881 patri...
1882 patri... DELETE OBJECT hQuery.
1883 patri...
1884 patri... END PROCEDURE. /* DumpDataHtml */
1885 patri...
1886 patri... /* _UIB-CODE-BLOCK-END */
1887 patri... &ANALYZE-RESUME
1888
1889 patri... &ANALYZE-SUSPEND _UIB-CODE-BLOCK
1890 patri... PROCEDURE dumpDataProgressD :
1891 patri... /* Dump as Progress .d file
1892 patri... */
1893 patri... DEFINE INPUT PARAMETER picFileName AS CHARACTER NO-UNDO.

```

**First element of expression is not**

Bug Critical Open

sonarqube Projects Issues Rules Quality Profiles Quality Gates Administration

DataDigger ☆ master Overview Issues Security Hotspots Measures Code Activity

Last analysis had 1 warning June 29, 2020, 10:42 AM Version 1.0

Project Settings Project information

QUALITY GATE STATUS **Passed** All conditions passed.

MEASURES

<b>78</b> Bugs	Reliability <b>D</b>
<b>0</b> Vulnerabilities	Security <b>A</b>
<b>28</b> Security Hotspots	0.0% Reviewed Security Review <b>E</b>
<b>3h 1min</b> Debt	<b>83</b> Code Smells Maintainability <b>A</b>
<b>0.6%</b> Coverage on 9.5k Lines to cover	<b>27</b> Unit Tests
<b>1.1%</b> Duplications on 29k Lines	<b>14</b> Duplicated Blocks

ACTIVITY

Issues

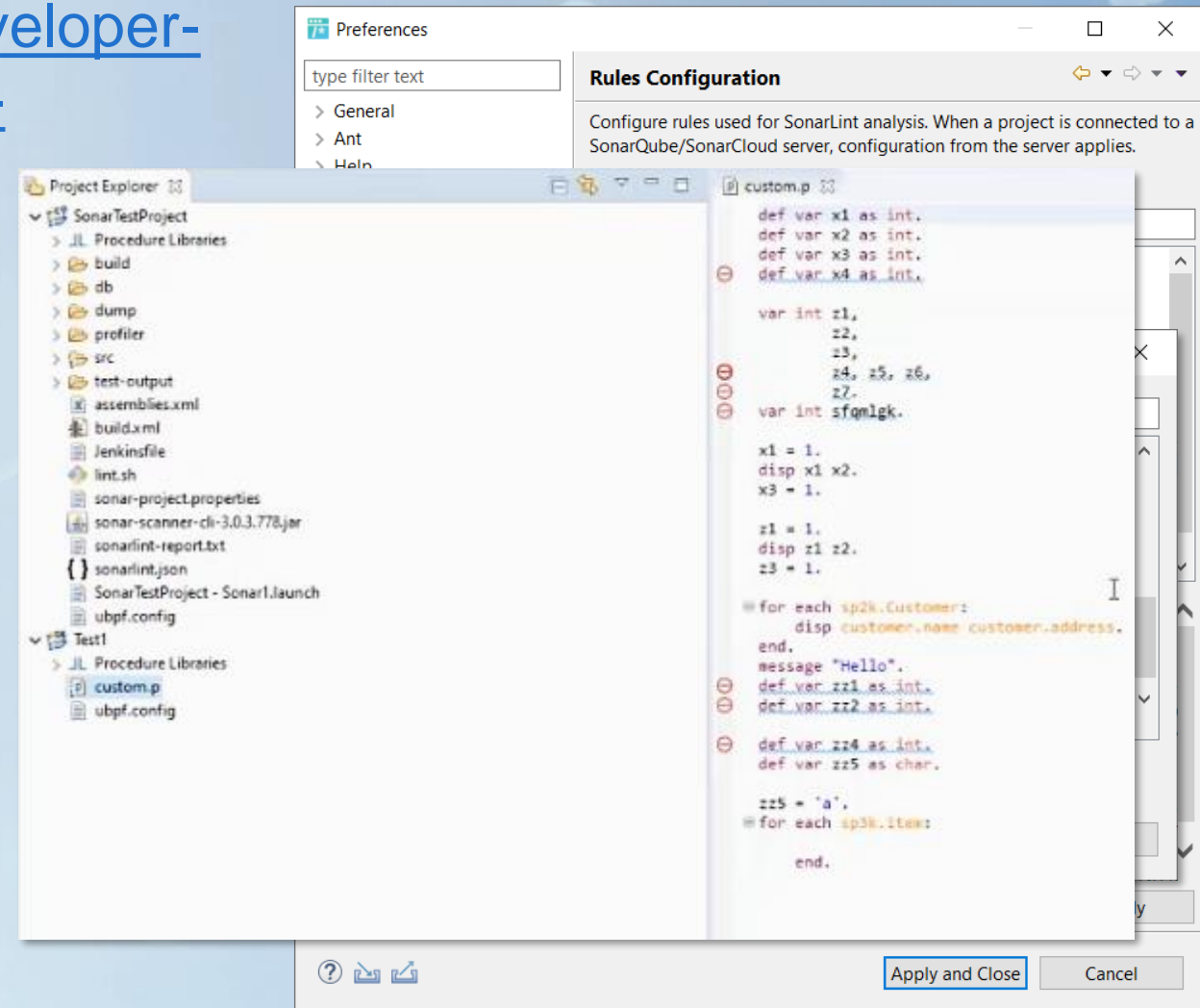
June 29, 2020 1.0

# SonarLint für ABL Code

■ <https://docs.progress.com/bundle/developer-studio-olh/page/Introduction-to-Code-Analyzer-for-ABL.html>

■ SonarLint: Eclipse Plug-In von SonarSource

- Sofortige Rückmeldung im PDSOE: Marker weisen auf verletzte Regeln hin
- Views
  - Issue Location und On-The-Fly: Liste der Probleme
  - Report: Alle Probleme in Projekt.
  - Bindings: Verbinden zum Sonarqube Projekt



# Riverside Sonar ABL Code Rules

- Evaluieren?
- Java 11 installieren
- SonarQube von <https://sonarqube.org> herunterladen und installieren.
- CABL von <https://github.com/Riverside-Software/sonar-openedge/releases> herunterladen und die zwei Plugins in `$SONAR_HOME/extensions/plugins` ablegen
- Sonarqube Portal <http://localhost:9000> öffnen, Login mit admin / admin
- Administration -> Configuration -> OpenEdge rules licenses
- Eval Lizenz generieren, Rules herunterladen und in `$SONAR_HOME/extensions/downloads` ablegen. Dann Sonarqube durchstarten.
- Ein Qualitätsprofil erzeugen und Analyse triggern

# Links

- Riverside Software : <http://riverside-software.fr>
- GitHub repo: <https://github.com/Riverside-Software/sonar-openedge>
- Code Analyser for ABL Editions und Preise: <https://cabl.riverside-software.fr/#/pricing>

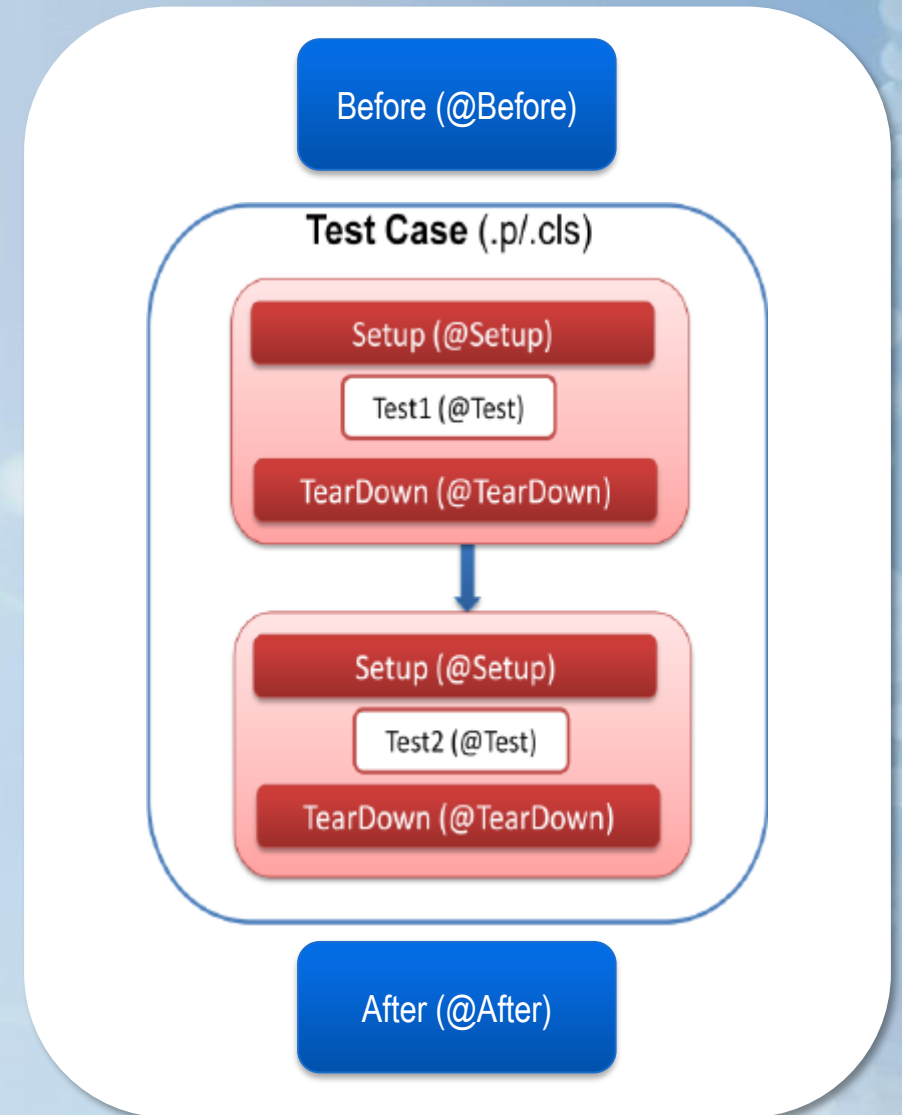
The screenshot displays the SonarQube web interface. The browser address bar shows the URL [https://sonar.riverside-software.fr/projects?sort=-analysis\\_date](https://sonar.riverside-software.fr/projects?sort=-analysis_date). The interface includes a navigation menu with 'sonarqube', 'Projects', 'Issues', 'Rules', 'Quality Profiles', and 'Quality Gates'. A search bar is present with the text 'Search for projects and files...'. The main content area shows a list of projects with their overall status and key metrics:

Project Name	Status	Bugs	Vulnerabilities	Hotspots Reviewed	Code Smells	Coverage	Duplications	Language
OpenEdge plugin for SonarQube	Failed	35 (C)	0 (A)	100% (A)	352 (A)	66.8%	2.8%	Java, XML
PCT	Failed	27 (C)	0 (A)	76.9% (B)	606 (A)	69.1%	11.6%	Java, OpenEdge, ...
Test project	Failed	9 (D)	0 (A)	— (A)	110 (C)	6.5%	1.1%	OpenEdge
DataDigger	Passed	1 (A)	0 (A)	—	422 (A)	1.3%	—	OpenEdge, XML

At the bottom of the interface, it states: 'SonarQube™ technology is powered by SonarSource SA. Developer Edition - Version 8.2 (build 32929) - LGPL v3 - Community - Documentation - Get Support - Plugins - Web API - About'.

# Modul Test mit ABL Unit

- Ein Framework zum automatisierten Testen von ABL Programmen (OE 11.4)
  - <https://docs.progress.com/bundle/developer-studio-olh/page/Learn-About-ABLUnit-Test-Framework.html>
- Integriert in PDSOE
  - ABL Unit Projekte
  - Wizzards zum Erstellen von Test und Test Suites
  - Ergebnisse im result.xml
- Testen
  - PSDOE ABL Unit Launch Configurations
  - CLI `prowin -p ABLUnitCore.p -param testSuite.cls`
  - ANT Task "ABLUnit"



# Modul Test mit ABL Unit

## ■ Test Framework

- OpenEdge.Core.pl – u. a. Assertions
- ablunit.pl – Das ABLUnit Framework, u. a. mit Runner “ablunitcore.p”

## ■ Aufbau

- Test Suite: Sammlung von Test Cases.
- Test Case: Prozedur oder Klasse mit mehreren Tests
- Test: Interne Prozedur oder Methode, die ein zu testendes Modul aufruft
- Assertion: Vergleicht die Ergebniss-Werte mit den Soll-Werten.

## ■ Steuerung über Annotations

```
USING OpenEdge.Core.Assert FROM PROPATH.  
  
BLOCK-LEVEL ON ERROR UNDO, THROW.  
  
DEFINE VARIABLE procHandle AS HANDLE NO-UNDO.  
DEFINE VARIABLE uname AS CHARACTER NO-UNDO.  
DEFINE VARIABLE pwd AS CHARACTER NO-UNDO.  
DEFINE VARIABLE res AS CHARACTER NO-UNDO.  
  
@Before.  
PROCEDURE Before:  
CONNECT C:\qa\testdb\ablunit.db -H localhost -S 5522 NO-ERROR.  
END PROCEDURE.  
  
@Setup.  
PROCEDURE setUp:  
RUN main.p PERSISTENT SET procHandle.  
END PROCEDURE.  
  
@Test.  
PROCEDURE validusr: /* Test1 */  
uname = "test".  
pwd = "test".  
RUN loginProc IN procHandle (INPUT uname,INPUT pwd,OUTPUT res) .  
Assert:equals("success", res).  
END PROCEDURE.  
  
@Test.  
PROCEDURE invalidusr1: /* Test2 */  
uname = "ablunit".  
pwd = "test".  
RUN loginProc IN procHandle (INPUT uname,INPUT pwd,OUTPUT res) .  
Assert:equals("success", res).  
END PROCEDURE.  
  
@Test.  
PROCEDURE emptyusr: /* Test3 */  
uname = ?.  
pwd = "invalid".  
RUN loginProc IN procHandle (INPUT uname,INPUT pwd,OUTPUT res) .  
Assert:equals("success", res).  
END PROCEDURE.  
  
@TearDown.  
PROCEDURE tearDown:  
DELETE PROCEDURE procHandle.  
END PROCEDURE.  
  
@After.  
PROCEDURE tearDownAfterProcedure:  
DISCONNECT ablunit.  
DELETE PROCEDURE THIS-PROCEDURE.  
END PROCEDURE.
```

# Modul Test / Externe Abhängigkeiten

- Datenbank mit Testdaten
  - Docker Image
  - Datenbank vor Test initialisieren
  - Datenzugriff mocken
- Andere Abhängigkeiten
  - Zugriff auf Services und APIs
  - Zugriff auf Framework-Komponenten
  - Betriebssystem
  - Präprozessoren

# Build Automation mit Progress Compile Tools

## ■ Apache ANT

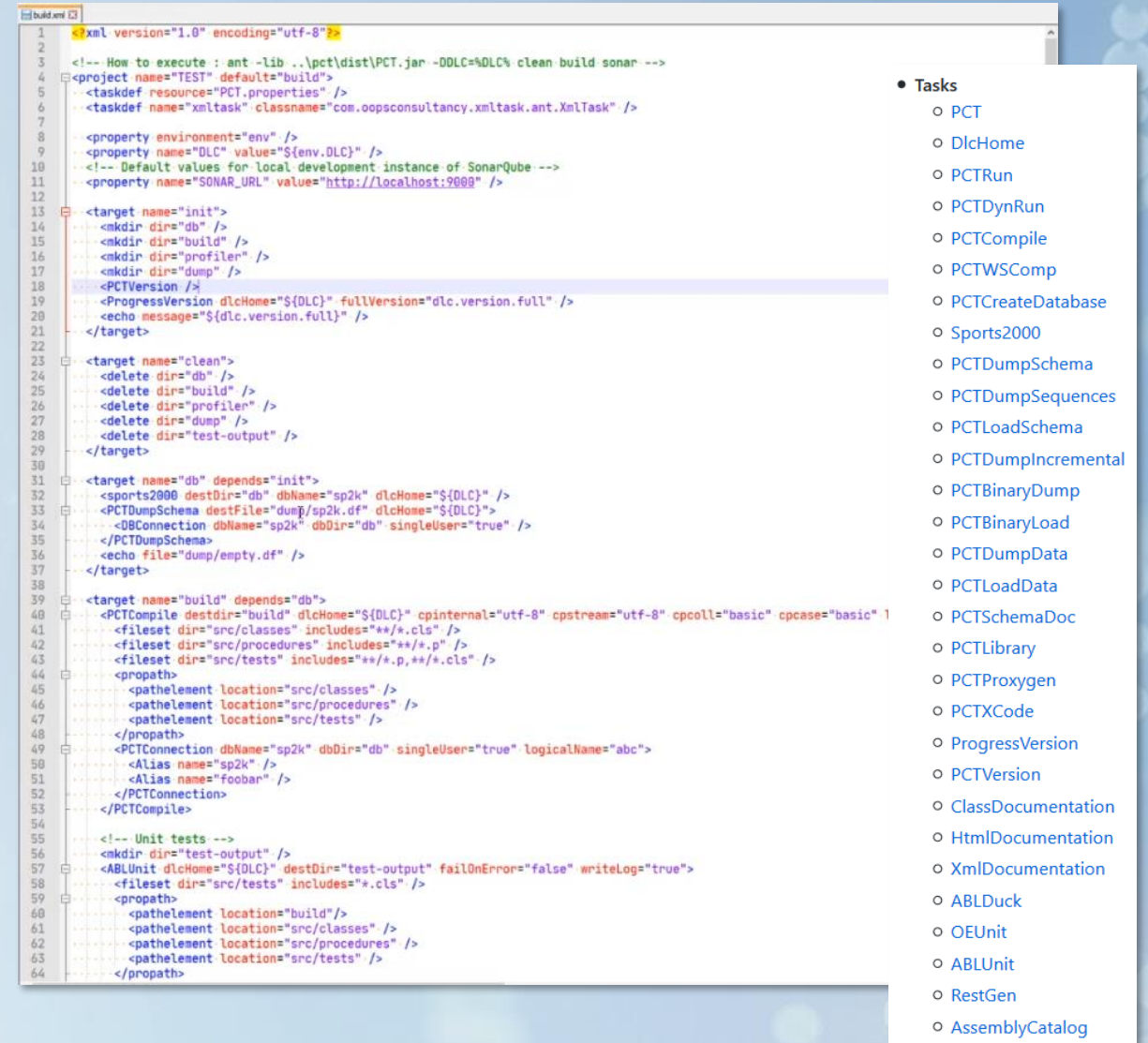
- Build Tool (Java)
- Steuerung per XML (Targets)

## ■ Progress Compile Tools (PCT)

- Ein Satz von ANT Tasks für ein Build von OpenEdge Projekten
- <https://github.com/Riverside-Software/pct>

## ■ Integration

- CLI ant <options> targets
- Aufruf aus PDSOE, Launch Config
- Aufruf vom Build Server
- Aufruf aus SonarQube



The image shows a screenshot of an XML Ant build file (build.xml) and a list of tasks. The XML code is as follows:

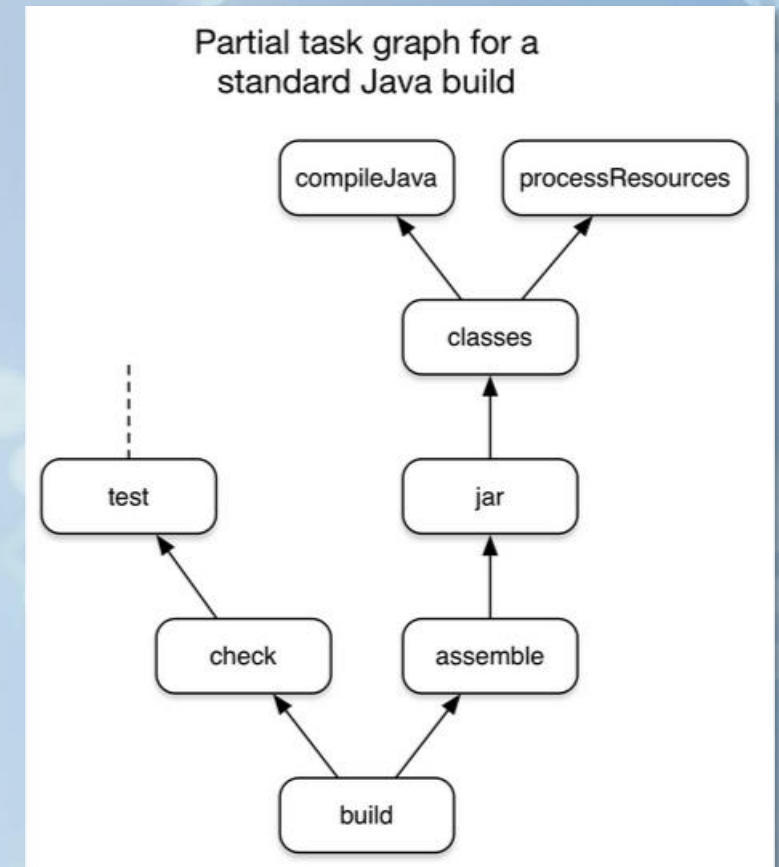
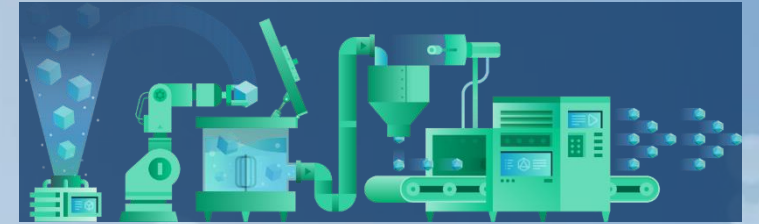
```
1 <?xml version="1.0" encoding="utf-8"?>
2
3 <!-- How to execute : ant -lib ..\pct\dist\PCT.jar -DOLC=%DLC% clean build sonar -->
4 <project name="TEST" default="build">
5   <taskdef resource="PCT.properties" />
6   <taskdef name="xmltask" classname="com.oopsconsultancy.xmltask.ant.XmlTask" />
7
8   <property environment="env" />
9   <property name="DLC" value="${env.DLC}" />
10  <!-- Default values for local development instance of SonarQube -->
11  <property name="SONAR_URL" value="http://localhost:9090" />
12
13  <target name="init">
14    <mkdir dir="db" />
15    <mkdir dir="build" />
16    <mkdir dir="profiler" />
17    <mkdir dir="dump" />
18  </target>
19  <PCTVersion />
20  <echo message="${dlc.version.full}" />
21 </target>
22
23  <target name="clean">
24    <delete dir="db" />
25    <delete dir="build" />
26    <delete dir="profiler" />
27    <delete dir="dump" />
28    <delete dir="test-output" />
29  </target>
30
31  <target name="db" depends="init">
32    <sports2000 destDir="db" dbName="sp2k" dlcHome="${DLC}" />
33    <PCTDumpSchema destFile="dump/sp2k.df" dlcHome="${DLC}">
34      <DBConnection dbName="sp2k" dbDir="db" singleUser="true" />
35    </PCTDumpSchema>
36    <echo file="dump/empty.df" />
37  </target>
38
39  <target name="build" depends="db">
40    <PCTCompile destDir="build" dlcHome="${DLC}" cpinternal="utf-8" cpstream="utf-8" cpcoll="basic" cpcase="basic" />
41    <fileset dir="src/classes" includes="**/*.cls" />
42    <fileset dir="src/procedures" includes="**/*.p" />
43    <fileset dir="src/tests" includes="**/*.p,**/*.cls" />
44    <propath>
45      <pathElement location="src/classes" />
46      <pathElement location="src/procedures" />
47      <pathElement location="src/tests" />
48    </propath>
49    <PCTConnection dbName="sp2k" dbDir="db" singleUser="true" logicalName="abc">
50      <Alias name="sp2k" />
51      <Alias name="foobar" />
52    </PCTConnection>
53  </PCTCompile>
54
55  <!-- Unit tests -->
56  <mkdir dir="test-output" />
57  <ABLUnit dlcHome="${DLC}" destDir="test-output" failOnError="false" writeLog="true">
58    <fileset dir="src/tests" includes="*.cls" />
59    <propath>
60      <pathElement location="build" />
61      <pathElement location="src/classes" />
62      <pathElement location="src/procedures" />
63      <pathElement location="src/tests" />
64    </propath>
```

Tasks:

- PCT
- DlcHome
- PCTRun
- PCTDynRun
- PCTCompile
- PCTWSComp
- PCTCreateDatabase
- Sports2000
- PCTDumpSchema
- PCTDumpSequences
- PCTLoadSchema
- PCTDumpIncremental
- PCTBinaryDump
- PCTBinaryLoad
- PCTDumpData
- PCTLoadData
- PCTSchemaDoc
- PCTLibrary
- PCTProxygen
- PCTXCode
- ProgressVersion
- PCTVersion
- ClassDocumentation
- HtmlDocumentation
- XmlDocumentation
- ABLDuck
- OEUnit
- ABLUnit
- RestGen
- AssemblyCatalog

# Build Automation mit Gradle

- Gradle Build Tool ist ein Open-Source-Build-Automatisierungswerkzeug. <https://gradle.org/>
- Gradle ist effizient und schnell, da es nur geänderte und abhängige Artefakte ins Build einbezieht.
- Gradle Enterprise (<https://gradle.com>) liefert Professionelle Services
- Setup des Gradle-Wrappers in gegebene OpenEdge Installation mit \$DLC/bin/progradle
- Integration mit Eclipse, “Buildship”
- CLI: `progradle myTask`



[https://docs.gradle.org/current/userguide/what\\_is\\_gradle.html](https://docs.gradle.org/current/userguide/what_is_gradle.html)

# Build Automation mit UBPF

- Unified Build and Packaging Framework (UBPF) for Gradle:
  - Gradle-Plugin für OpenEdge
  - Progress Developer Studio für OpenEdge liefert die Umgebungsparameter im UBPF.Config File.
  - UBPF integriert und nutzt PCT
- Latte
  - Ein von Progress erstelltes Fork des Grabl-Projekts <https://grabl.gitlab.io/>
  - Latte Home: <https://github.com/progress/latte>
  - Integriert PCT und Gradle, liefert so die ABL-Unterstützung für Gradle
  - Liefert Gradle-Tasks zur Kompilierung von ABL-Code und zur Durchführung von Unit-Tests mit ABLUnit.

# Gradle Setup für OpenEdge

- Proenv öffnen. progradle aufrufen. Download und Setup wird ausgeführt. Danach ist der Gradle-Wrapper in \$DLC/gradle installiert.
- UBPF Plugin in Build File referenzieren
  - Doku dazu auf <https://github.com/progress/latte/wiki>
- Aufruf per progradle (wrapper für gradlew).
  - progradle -h für liste aller Optionen
  - progradle build startet den Build Prozess
- ubpf.config
  - Default OpenEdge Gradle build Festlegungen
  - Im Project Root
  - <https://docs.progress.com/bundle/developer-studio-olh/page/Unified-Build-and-Packaging-Framework.html>

# ubpf.config und gradle.build

- Gradle liest build.gradle, darin die Referenz zum ubpf-Plug-in
- ubpf-Plug-in liest ubpf.config im aktuellen Verzeichnis
- ubpf.config wird von PDSOE erstellt, Kopie der Projekt Properties.
- build.gradle
  - “Leer”: Alle kompilierbaren Sourcen im aktuellen Verzeichnis und Unterverzeichnissen werden kompiliert.
  - Mit Liste von Tasks: Es werden diese Tasks ausgeführt. Liste der Tasks und der Parameter auf

<https://github.com/progress/latte/wiki>

```
apply plugin: 'base'

// This sets some global variables to the plugin, such as proppath and where
// rcode is stored
abl {
    proppath = files('src')
    rcodeDir = 'build/rcode'
}

// This is a new task added to Latte, all of its options match the PCT task
// PCTCreateDatabase (found here: https://github.com/Riverside-Software/pct/wiki/PCTCreateDatabase)
task createDB(type: CreateDatabase) {
    dbName = "sports2020"
    destDir = "${buildDir}/db"
    sourceDb = "/path/to/dlc/sports2020.db"
    largeFiles = true
}

// This is a new task added in Latte, all of its options match the PCT task
// PCTConnection (found here: https://github.com/Riverside-Software/pct/wiki/PCTConnection)
// This creates a reusable DBConnection with the id 'sports2020' that was created
// in the task above.
task connectDB(type: DBConnection) {
    dependsOn createDB
}

/* Enable this if there is an pct build.xml available */

/* Add the plugin jar to build scripts classpath */
buildscript {
    dependencies {
        classpath files('libs/ubpf-0.1.0.jar')
    }
}

/*
// /* Applying abl plugin adds all the tasks supported by the plugin to the project context.
// Currently only clean and build tasks are supported */
*/
ta: apply plugin: 'progress.openedge.abl'
```



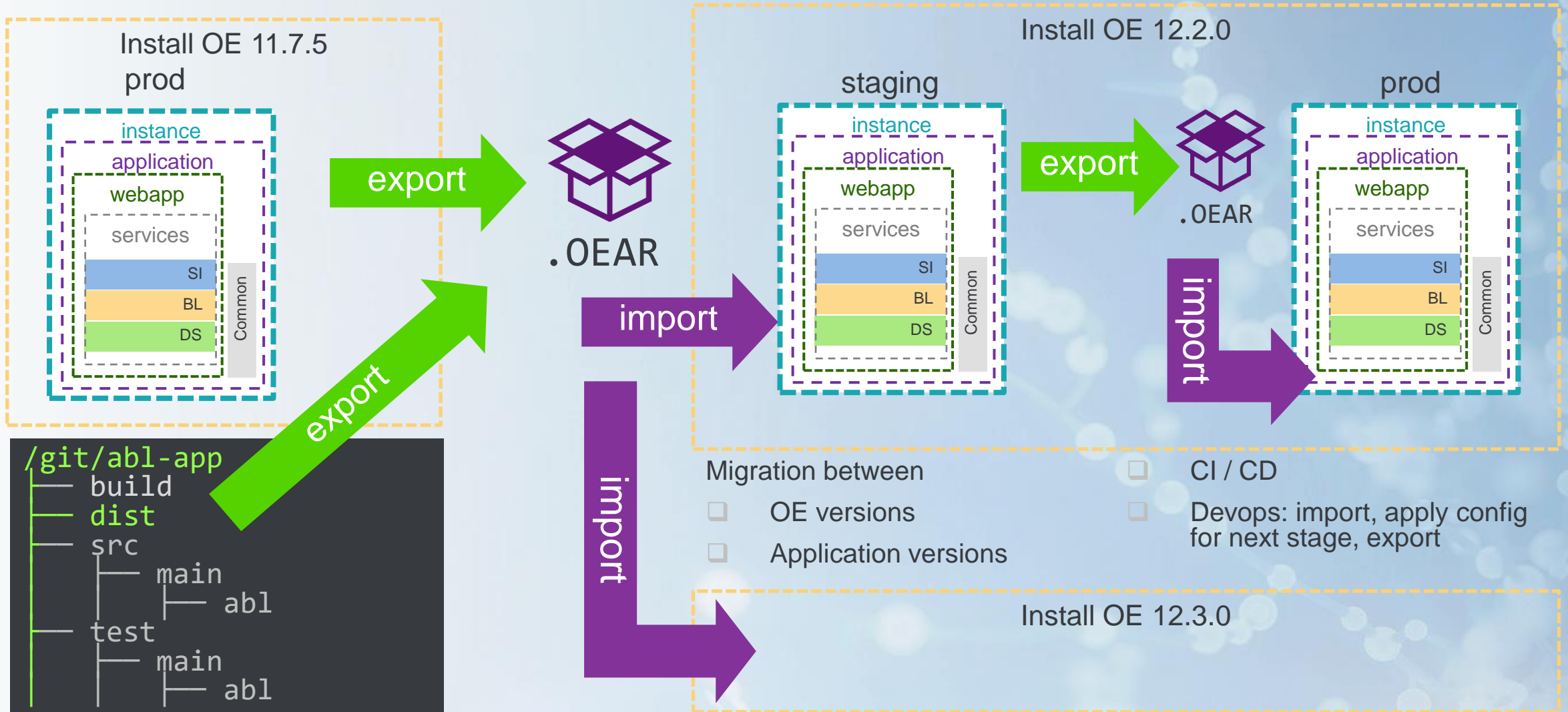
# Continuous Deployment mit OpenEdge

# CI/CD: Deploy into PASOE with OE Archive

- OpenEdge Archive mit OE 12.2 eingeführt.
  - Tcman export und import liefern Anwendungskomponenten aus Test/Staging in die Zielumgebung.
- Abgestimmte Paket- und Verzeichnisstruktur
- Ant Deployment Scripts entpacken das Archive und mergen die neuen Artefakte.
- Vorher- und Nachher-Hooks für Customizations.

```
pasoe-instance-1
├── ablapps
├── bin
├── common
├── conf
├── logs
├── openedge
├── temp
├── webapps
└── work
```

# Deployment von OpenEdge Archives



# Update / Installation in der Zielumgebung

- **Anwendungs-Artefakte**
  - Können im laufenden Betrieb in PASOE deployed werden
  - Agents refreshen (jmx, REST API) oder propath in openedge.properties ändern.
- **Datenbank-Struktur und Datenbank-Server-Parameter**
  - Index hinzufügen und aktivieren, Feld ergänzen, Feld umbenennen, etc.
  - Viele Online Anpassungen inzwischen möglich.
- **OpenEdge GUI Client**
  - .msi Installer

# OpenEdge Containers auf dem Docker Hub

The screenshot shows the Docker Hub search results for 'OpenEdge'. The top navigation bar includes the Docker Hub logo, a search bar with 'OpenEdge' entered, and links for 'Explore', 'Pricing', 'Sign In', and 'Sign Up'. Below the navigation bar, there are tabs for 'Docker EE', 'Docker CE', 'Containers' (which is selected), and 'Plugins'. The search results are displayed in a grid. On the left, there are filter options: 'Filters (1) Clear All', 'Docker Certified' (with a sub-filter for 'Docker Certified'), 'Images' (with sub-filters for 'Verified Publisher' and 'Official Images'), and 'Categories' (with sub-filters for 'Analytics', 'Application Frameworks', 'Application Infrastructure', 'Application Services', and 'Base Images'). The search results show 1 - 2 of 2 results for 'OpenEdge'. The first result is 'Progress Application Server (PAS) for OpenEdge', which is Docker Certified and a Verified Publisher. It is described as a platform that provides Web server support for OpenEdge applications. The second result is 'Progress OpenEdge RDBMS', also Docker Certified and a Verified Publisher, described as a relational database at the core of the Progress OpenEdge application development. Both results include tags for their architecture and platform compatibility.

**Filters (1) Clear All**

Docker Certified ⓘ

Docker Certified

Images

Verified Publisher ⓘ  
*Docker Certified And Verified Publisher Content*

Official Images ⓘ  
*Official Images Published By Docker*

Categories ⓘ

Analytics

Application Frameworks

Application Infrastructure

Application Services

Base Images

1 - 2 of 2 results for **OpenEdge**. [Clear search](#)

Most Popular ▾

× Publisher Content

**Progress Application Server (PAS) for OpenEdge** **DOCKER CERTIFIED** VERIFIED PUBLISHER

By Progress Software Corporation • Updated 18 days ago

Progress Application Server (PAS) for OpenEdge is a platform that provides Web server support for OpenEdge applications.

Container Docker Certified Linux x86-64 Application Infrastructure Base Images

**Progress OpenEdge RDBMS** **DOCKER CERTIFIED** VERIFIED PUBLISHER

By Progress Software Corporation • Updated 18 days ago

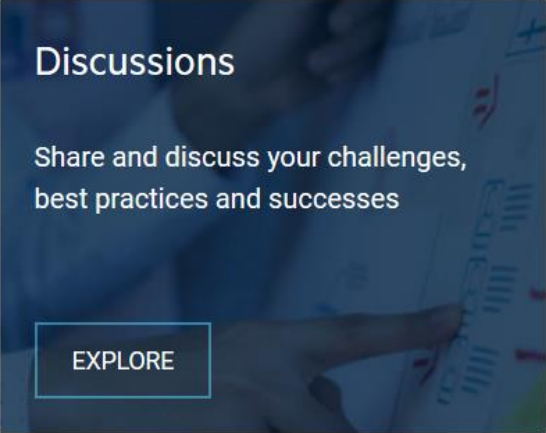
The Progress OpenEdge RDBMS is a relational database that lies at the core of the Progress OpenEdge application development ...

Container Linux x86-64 Databases

**Participate!**

# Welcome to the New Progress Community

Mingle with other Progress customers, partners and employees and find the answers to any challenges you may face.



### Discussions

Share and discuss your challenges, best practices and successes

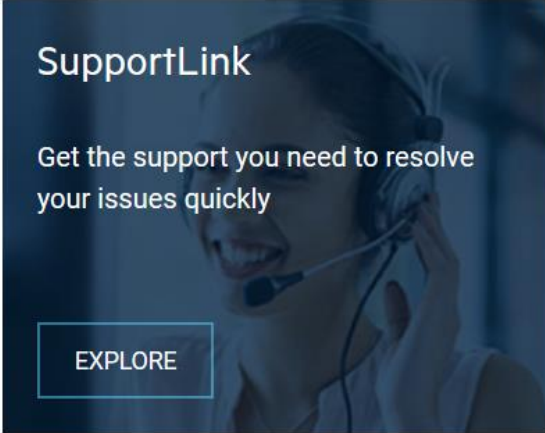
[EXPLORE](#)



### Collaboration Groups

Collaborate with Progress developers, customers and partners

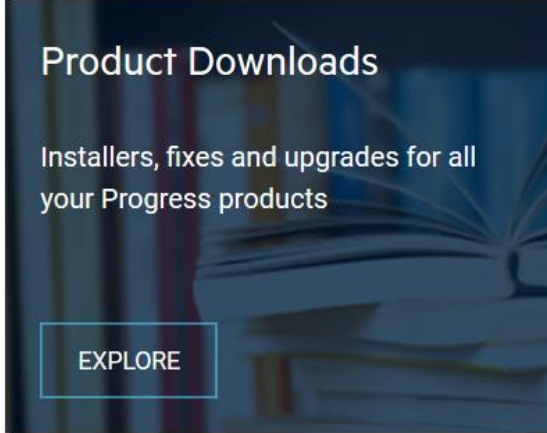
[EXPLORE](#)



### SupportLink

Get the support you need to resolve your issues quickly

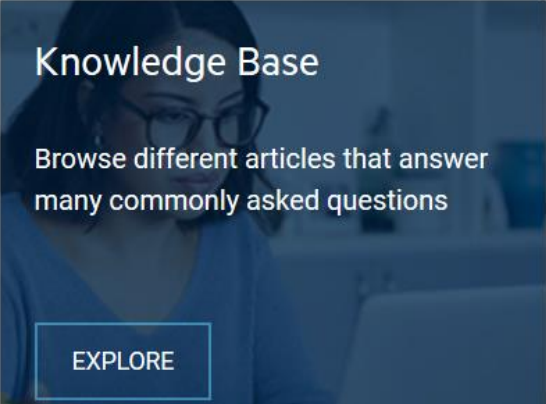
[EXPLORE](#)



### Product Downloads

Installers, fixes and upgrades for all your Progress products

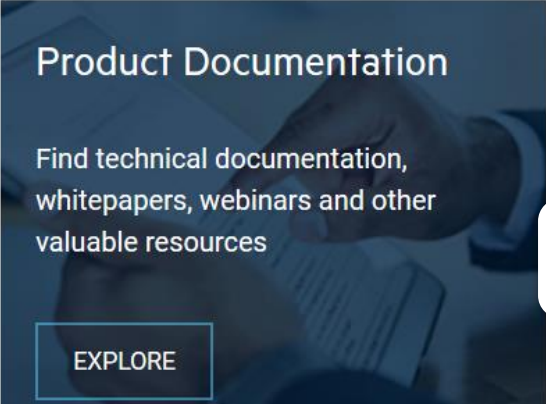
[EXPLORE](#)



### Knowledge Base

Browse different articles that answer many commonly asked questions

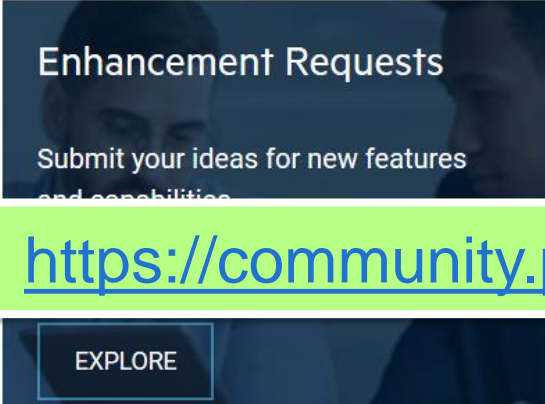
[EXPLORE](#)



### Product Documentation

Find technical documentation, whitepapers, webinars and other valuable resources

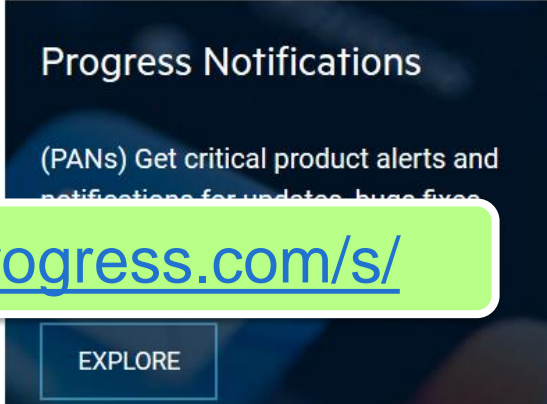
[EXPLORE](#)



### Enhancement Requests

Submit your ideas for new features and capabilities

[EXPLORE](#)



### Progress Notifications

(PANs) Get critical product alerts and notifications for updates, bugs, fixes

[EXPLORE](#)

<https://community.progress.com/s/>



Archive of former Progress Community Discussions

# We have moved our Community Portal.

We have moved our Community Portal since April 20, 2020, but you can still access past discussions by searching within each topic. The New Community portal provides more resources and better interaction with other Progress users.

VISIT COMMUNITY PORTAL

Home

## Community Archive Index

<https://community-archive.progress.com/>

### COGNITIVE SERVICES

[Corticon](#) (265)

### DATA CONNECTIVITY AND INTEGRATION

[Data Direct](#) (105)

### OPENEDGE

[OpenEdge BPM](#) (214)

[OpenEdge RDBMS](#) (1166)

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### PROGRESS USER GROUPS

[Progress User Groups](#) (164)

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[PUG Germany - General](#) (49)

# OpenEdge Ideas

Your portal to submit new ideas (enhancement requests) for Progress OpenEdge. Anyone can submit and vote on ideas, and these will be reviewed and prioritized by the Product Management team. If you submitted or subscribe to an idea, you will get automatic email notifications of comments and significant status changes.

Add a new idea

Recent

Trending

Popular

Search ideas

- My ideas 0
- My votes 1
- My subscriptions 1

### FILTER BY STATUS

- New 19
- Under review 214
- Already exists 11
- Will not implement 332
- Future consideration 85
- In progress 8
- Shipped 13

### FILTER BY CATEGORY

- Application Server 7
- BPM 12
- Development 381
- Install and Deployment 50
- OpenEdge Database 200

76  
VOTE

## Complete OO functionality in ABL

Currently there are quite some OO features missing in ABL that are common in other OO languages like Java or C#:An extended list of wanted features is available at <http://www.oehive.org/oowishlist>, but I would like to repeat some here which I thin...



Created 6 months ago by Lieven De Foor  
Development

In progress

0

19  
VOTE

## Add server-side join support for open query statement (static query)

We would like to have SSJ support for static queries (using the open query statement) like:DEFINE QUERY q1 FOR Customer, order SCROLLING.OPEN QUERY q1 FOR EACH customer NO-LOCK, EACH order OF customer NO-LOCK.



Created about 2 months ago by Heino Vander Sanden  
Other

In progress

0

69  
VOTE

## Unused Code

Provide optional compiler warnings for variables and properties which are not referenced in the compile unit. There is another Idea posted with similar ask here <https://progresssoftware.aha.io/ideas/ideas/OPENEDGE-I-693> Variables and properties that...

<https://openedge.ideas.aha.io>

# We're Open to Your Feedback And on the Edge of our Seats

BECOME A CVP MEMBER

ALREADY A CVP MEMBER

Delivering software that meets your high expectations is our number one priority.

Nun zu finden unter [Community.Progress.com](https://community.progress.com) -> Groups, rechte Seite, Liste der CVP Gruppen.

OpenEdge CVP <https://community.progress.com/s/group/0F94Q000000HakDSAS/openedge-cvp>

**Questions?**

