



Git For SAP

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About the Speakers

Ram B

- Sr S/W Engineer Manager, Microsoft
- IT professional with 20+ years of experience
- Wrote articles for a Finance Magazine.

Gopal Nair

- Sr S/W Engineer, Microsoft
- IT Professional with 15+ years of experience
- Used to be a Basketball Player

Agenda

- SAP at Microsoft
- Challenges
- Gap Analysis
- Goals & Objectives
- Git & Azure Devops
- Architecture
- Roadmap
- Use Cases
- Demo
- Questions



1993



2014



SAP

SAP

@



Microsoft

2016

SAP

Microsoft



2018



1993



Go-to market

S/4HANA | SAP HANA extended alliance

Microsoft and SAP jointly market interoperability solutions such as Power BI for SAP HANA

2014



Technology partner

Strong technology agreement since 1993

Development co-located in both Walldorf and Redmond

Azure is a certified platform for SAP solutions including HANA scale-out 60TB, HANA scale-up 24TB

2016



Customer

Strong customer relationships for more than 20 years

Microsoft runs on SAP with 100K+ users

SAP is a top Microsoft global customer with standardized Microsoft solutions

2018



SAP At Microsoft

ERP - ECC 6.0 EhP6

Finance/Corporate Services: Finance, Controlling, Accounting, Enterprise Controlling, Treasury, Project Systems, Financial Services, Real Estate, Corporate Finance Management, InHouse Cash Center, Rev Acc & Report

FI CO AC EC TR
PS FIN RE CFM IHC
RAR

Human Capital Management: Personnel Administration, Benefits, Organizational Management, Talent Management, Personnel Time Management, Payroll

PA BN OM TM PT
PY

Supply Chain Management: Sales and Distribution, Materials Management, Logistics, Logistics Execution

SD MM LO LE
CEE

Add-On: Core Country Version for Central and Eastern Europe

GTS 10.1

Global Trade Services: Compliance Management, Customs Management

CON CUS
TRE
TREX: for Sanction Party List Screening

X

SCM 7.0

Supply Chain Management: Demand Planning, Event Management, Supply Network Planning, Global ATP Check

DP gAT
SNP P

MDG ECC 6.0 EhP7

Master Data Gov: Business Partners

BP

Concur

E-REC ECC 6.0 EhP4

E-Recruiting: Applicant Tracking, Requisition Management

AT RM
TRE
TREX: for Candidate Resumes

X

BI/BPC 8.1

Business Planning & Consolidation, BI

BPC
BI

OERDSC NW 7.4 9.2

Object Event Repository: Secure Track and Trace Scenario

STT
AIN

Add-On: Auto-Infrastructure ID

SuccessFactors

SuccessFactors

HYBRIS

GI/RM/CA
Convergent Invoicing, Receivables Mgmt, Contract Accounting

RM CA
IS: Telecommunications

ECC 6.0 EhP7

OER NW 7.0 EhP2

Object Event Repository: Secure Track and Trace Scenario

STT
AIN

Add-On: Auto-Infrastructure ID

CC 4.0

Conv. Charging: Direct Billing, Rating

BL
RT

IBP

Integrated Business Planning

Ariba Network

Ariba Business Network

Ariba Sourcing

Ariba Direct Sourcing

SMG

Solution Manager: Custom Development Management Cockpit, Maintenance Optimizer, SAP Support Services

7.2 CD
M MAI
SER

GRC 10.1

Governance, Risk & Compliance

GRC

Others

BOBJ Data Services 4.2
PI/XI NW 7.3 Process Integration
DUET Enterprise 2.0
Tidal Enterprise Scheduler
BSI Tax Factory

Vertex Sales Tax
Esker Faxing
RealTech
Others

SAP Applications At Microsoft – Business View

| | | | | | | | | | |
|----------------------------|---|--|---|-----------------------------------|--|--------------------------------|-----------------------------------|---|--|
| HR | Shared SAP System ECC Personnel Admin, Benefits, Org Mgt, Talent Mgt, Time Mgt, Payroll, Recruiting | | Electronic Recruiting EREC | | | | | | Learning & Succession Success Factors |
| Finance | Accounting, Controlling, Treasury, Project Systems, Financial Svcs, Real Estate, Corp Finance, In-House Cash, Rev Rec, Trade, Customs | Shared SAP System RMCA Hybris High Volume Invoices & Receivables | Governance, Risk and Control GRC | Global Trade Screening GTS | Business Planning & Consolidation BPC | Revenue Recognition RAR | Master Data Governance MDG | Duet for CIM DUET | Customer Finance Mgmt CFM |
| SCM | Sales and Distribution, Materials Mgt, Logistics, Logistics Execution, Demand Planning, Event Mgt, Supply Network Planning | | | | Supply Chain Mgmt SCM | SCM Care OER | | Integrated Business Planning IBP | Sourcing & Dir. Network Ariba |
| Commerce | Volume Licensing Bedrock, Next Gen VL, OEM, Universal Store, Convergent Charging & Invoicing, Contract Accounting, Rating | | | | Services Billing CC | | | OEM Services OER | |
| Enterprise Services | Sales and Distribution, Finances | | | Customer Project Mgmt CPM | | | | | Expense Mgmt Concur |
| SAP Platform | | | Solution Manager SOLMAN | Business Objects BOBJ/DS | Adobe Document Services ADS | XI/PI | | | |

SAP ERP By The Numbers



Deliver Reliant & Agile ERP Platform



Enable Modern Experiences



Provide Real Time Processes

| | | | | | | | | | |
|-----------------------|-------------------------------|-------------------------|--|----------------------------|------------------------|----------------------------|-----------------------------|-------------------------------|---------------------------|
| 17TB | Highly compressed database | Uncompressed size ≈55TB | 9M | Up to Dialog Steps/Day | 300K | Monitored Batch Jobs/Month | 300M | Up to Transaction steps/Month | |
| SAP Surround Strategy | | 110K | Internal Users (Mostly Indirect Access to SAP) | 8K | Named User Accounts | 96% | Non-SAPGUI users | Major First & Best Program | |
| | | 0.4 | Seconds user response time | Business Process Expertise | | | | 99.998% | Raw SQL/Win Uptime |
| 2x | System growth in past 2 years | 2x | Transaction volume ever 18-24 months | ≈600 | Servers (100% virtual) | 250TB | Compression Storage Savings | 15-30% yearly | Incident Ticket Reduction |

High Quality Enterprise Service Offerings via SAP

Challenges



- Drive Agility and adopt Devops Culture
- Align to modern CI/CD lifecycle
- Automate SDLC with Strong Quality Gates
- Enhance platform resiliency via automated processes and tools

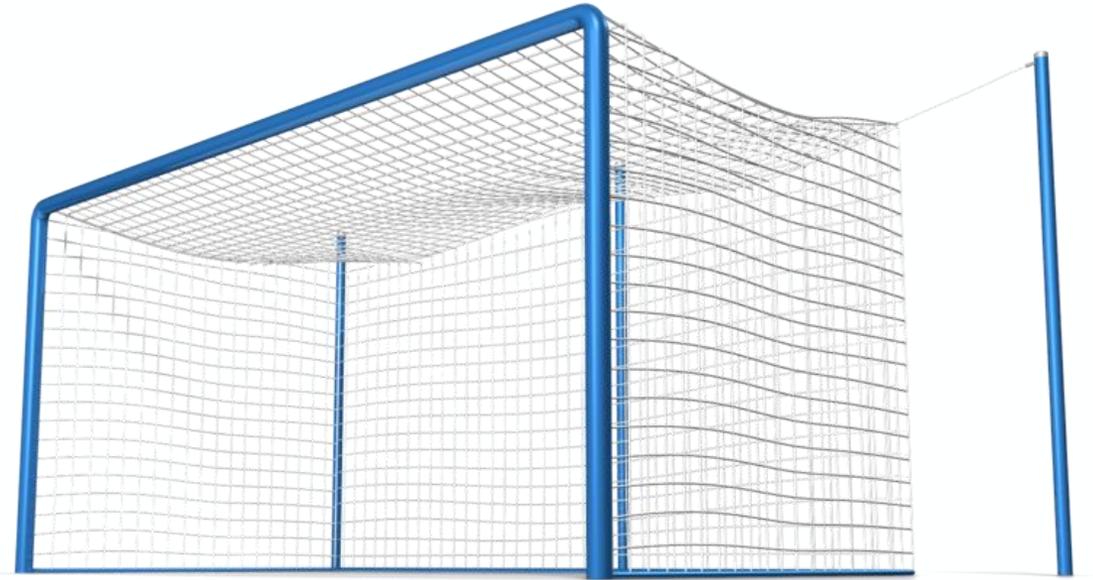


Gap Analysis

- Single, Shared Repository integrated into the Database
- SAP IDE tightly integrated into SAP Application server (SE80, SE38..etc).
- No Standalone Run-time.
- No automated code reviews and unit testing
- Lacks easy Roll-Backs in case of issues.
- Multiple editors/IDEs for different technologies
- No support for multiple code versions
- No support for multiple configuration versions

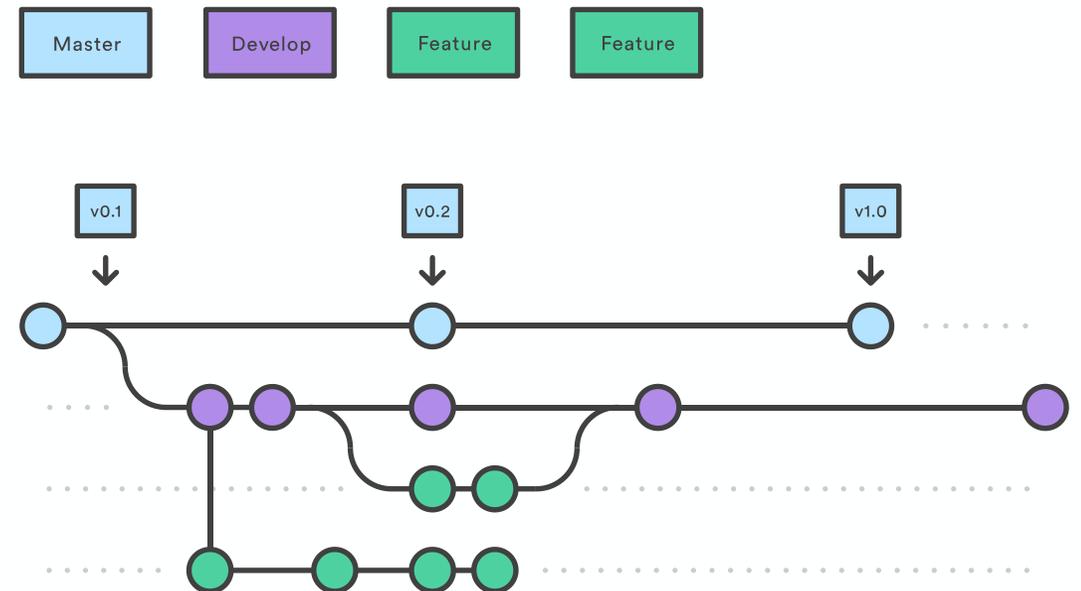
Goals & Objectives

- Targeted Code reviews and Audit Trails
- Modernize SAP Version Controls
- Strong Integration with Azure DevOps and Agile Execution
- Zero Touch Deployments Through Pipelines



What is Git – A Quick Introduction

- ❑ Distributed Version Control System
- ❑ Widely used in Software Engineering outside SAP area – But SAP is catching up.
 - Modern technologies already Git Enabled (Eg: WebIDE)
 - ABAP, Configuration – Not Yet!
- ❑ Some Git Terminologies
 - Clone, Branch, Pull, Commit, Push
 - The “Master” branch – and perhaps “Develop” Branch – How About a “QA” Branch?
 - Collaboration using “Fork”, “Branch”
 - A “Pull Request”
 - Fast Forward Merge, Conflict Resolution
- ❑ Examples of Git Implementation Online :
 - GitHub, GitLab, BitBucket, Azure Dev-Ops
- ❑ A Brisk walk on a “Gitters” workflow:
 - “Math” Library with “Git”
 - More on this as Hands-On during our Demo



Azure DevOps – What is it?

Azure DevOps brings together people, processes, and technology, automating software delivery to provide continuous value to business users.



Azure Pipelines

CI/CD that works with any language, platform, and cloud. Connect to GitHub or any Git repository and deploy continuously.



Azure Boards

Powerful work tracking with Kanban boards, backlogs, team dashboards, and custom reporting.



Azure Artifacts

Maven, npm, and NuGet package feeds from public and private sources.



Azure Repos

Unlimited cloud-hosted private Git repos for your project. Collaborative pull requests, advanced file management, and more

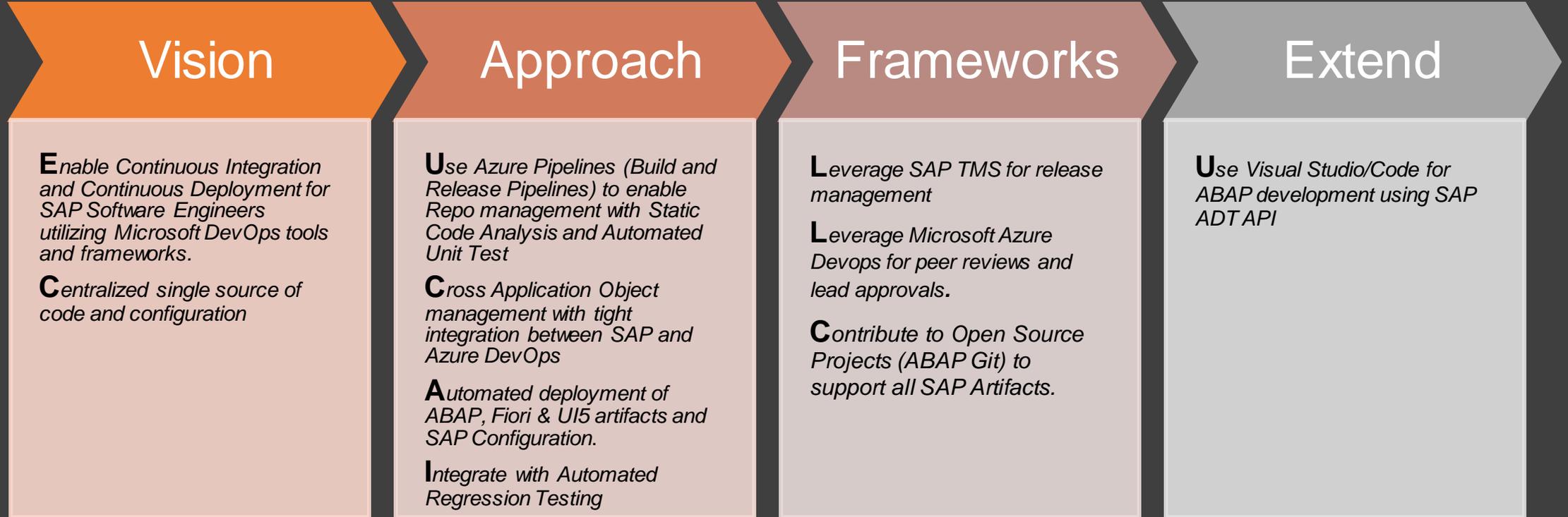


Azure Test Plans

All in one planned and exploratory testing solution.

<https://azure.microsoft.com/en-us/blog/introducing-azure-devops>

Purpose and Plan



ABAPGit ()

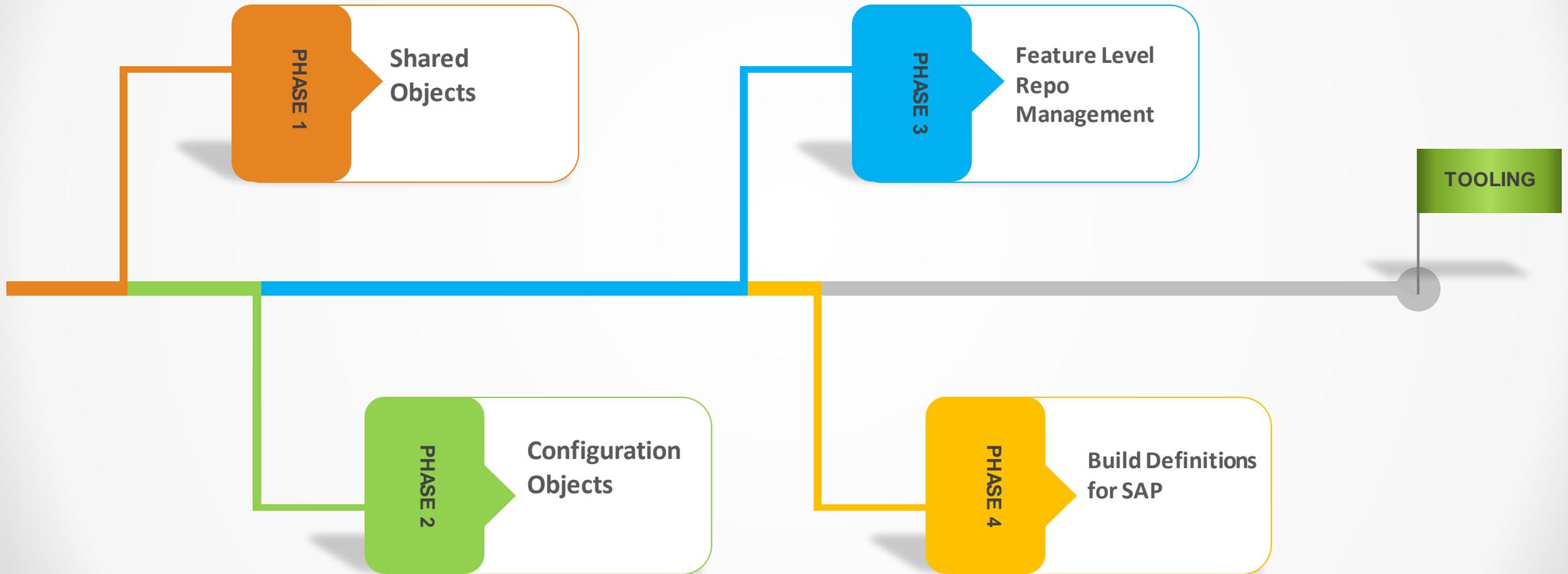
- Created by [Lars Hvam](#) – Has many contributors
- Open Source project enabling SAP integration with Git
- Works on ABAP Package Level
- [User Exits allows Fine-Tuning](#)

<http://www.abapgit.org>

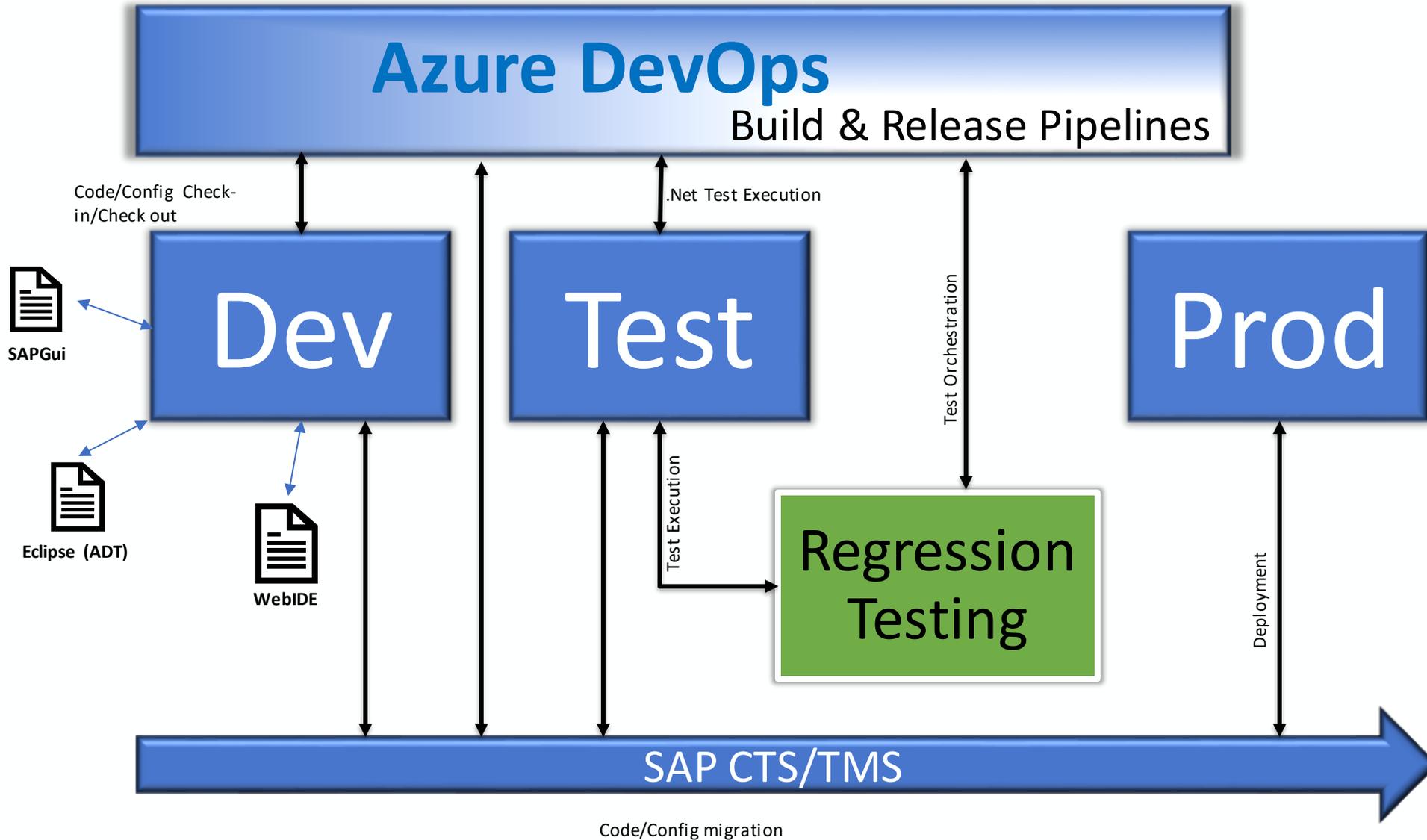
Extensions to ABAPGit

- Single Sign-on using Azure Active Directory
- Support functional configuration (Planned)
- Support technical configuration(Planned)

Roadmap



Proposed Architecture



Approach

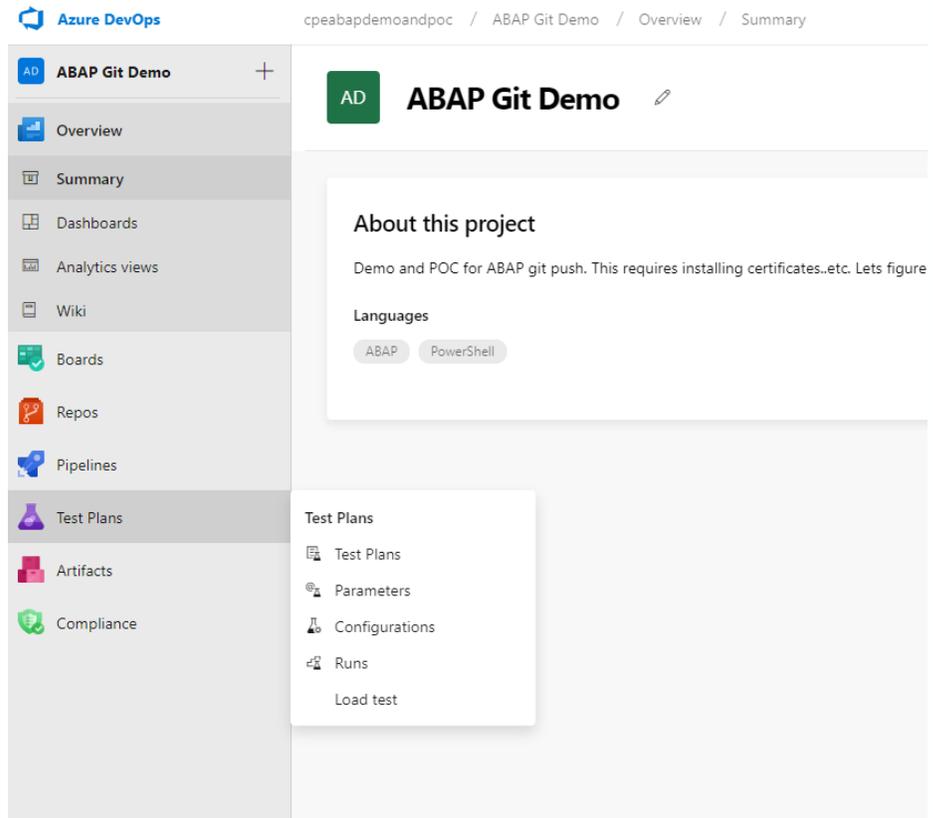
Security – SSO with Azure Active Directory

RICEFW and Package Hygiene

RICEFW ID as Package ID and Dependencies

Utilize Package Interface Functionality

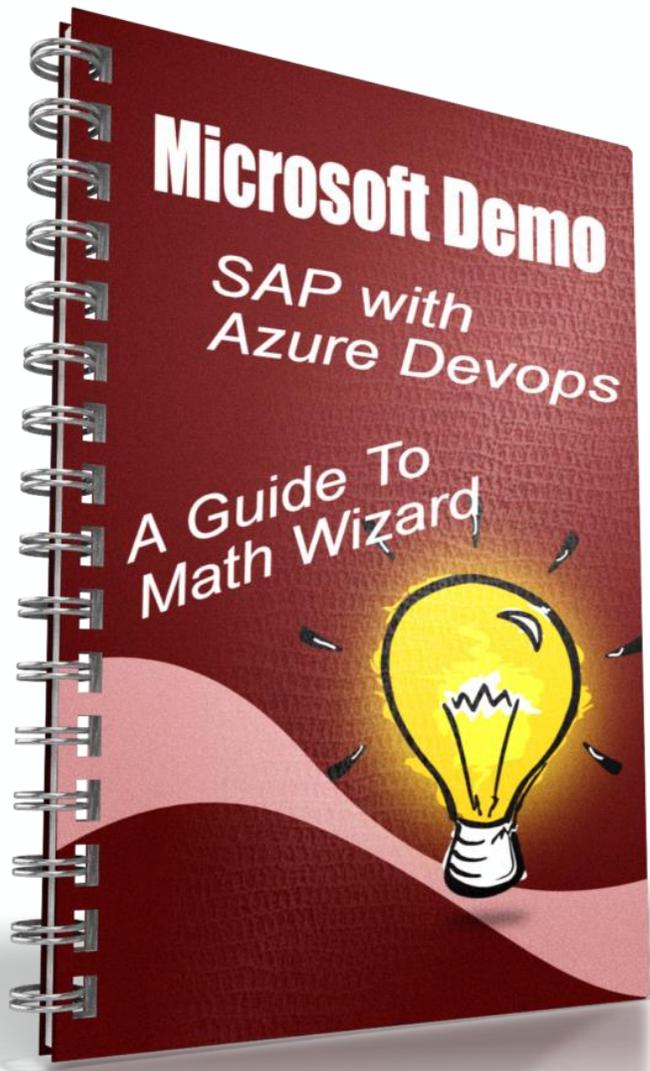
Azure DevOps Automations





Demo

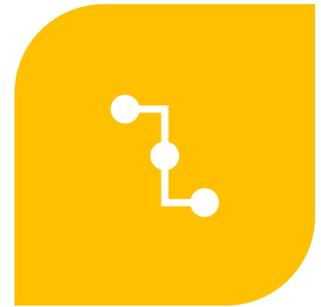




DEVELOPER A IS WORKING ON A PROGRAM THAT USES MATH CLASS 1. HE DISCOVERS A BUG THAT HE REPORTS TO DEVELOPER B.



DEVELOPER B FIXES THE ISSUE IN THE SOURCE SYSTEM AND MAKES A PULL REQUEST INTO THE MASTER. AFTER CODE REVIEWS, AUTOMATED TESTS ARE RUN AND CODE IS MERGED INTO MASTER



DEVELOPER A PULLS DOWN THE CODE INTO THE TARGET SYSTEM AND STARTS USING THE FIXED CLASS/METHOD.

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Presentation Materials

Access the slides from 2019 ASUG Annual Conference here:

<http://info.asug.com/2019-ac-slides>

Q&A

For questions after this session, contact us at

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