

Preparing the ecosystem for Continuous Delivery at Atmel

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......



Let us know

what you think



Always keep in mind

The core goal is to:

- Release high-quality code and binaries that perform well
- Develop products that are of good quality
- To do so much more rapidly than traditional approaches to development, testing, and deployment would allow





Project Build Have Scale Dathers

Sindio

Before 5 years ago

- Planning
 - Upfront planning and estimates for each development cycle (waterfall)
 - 1 major release a year
 - 2 month release cycle
- Quality
 - Several bug fixes after release
 - Feature changes during development cycle
 - Manual tasks for building and testing
- Resources
 - 15-20 SW/HW developers in one location

JUL A

- Person dependent
- Not scalable



Challenges

• Making one solution for several MCU architectures

- Adding more features faster
- Changing priorities
- Monolithic design
- Many developers in several locations



Vision (then)

Some of the visions we set us

- Work Agile and Scrum
- Automate building
- Automate testing
- Modern Issue Management
- Digital planning
- Uniform Version Control System





Make services available for development

Look at your world as a set of services





Solution?

Some of the major decisions we made

- Automate all building with **Jenkins**
- Dependency management with Apache lvy
- Artifact service using Apache Archiva
- Automate testing
 - Test robot
 - Static test fixtures
- Modern Issue Management with Atlassian Jira

- Digital planning with Atlassian Agile
- Version Control System with Subversion



An ecosystem with several components

Atmel Studio





New challenges

We learn as we go forward

-

- Popularity of Jenkins grew very fast
- More people demanded more uniform processes
- Need for sharing info, knowledge, and learning
- Management and other departments needs to understand how we now work scrum-wise

Needed an outside view and input to take the next step



Continuous Everything?

What the ... is this?

- Continuous Integration?
- Continuous Test?
- Continuous Delivery?
- Continuous Provisioning?
- Continuous Deployment?

How does this relate to:

- Agile
- Scrum
- Kanban
- Extreme Programming

And what is DevOps?





Praqma engagement

Atmel needed some outside help!

- Assessment: Get an overview of the road ahead
- Jenkins CI: Best Practices
- VCS: SVN to Git migration
- **Git:** Best Practices
- **Atlassian:** Stash <> Jira integration
- Continuous Delivery: Roll-out to entire corporation



A VCS migration Domain Specific Language SVN to Git migration ...as code

- Analyse current SVN structure and system architecture
- Agree on ground rules
- Handheld PoC migration
- A SVNtoGit DSL
- An interpreter
- An automated process
- Shut down SVN server



The Automated Git Flow

"The Benevolent Dictator Governance Model"





Automated Git Flow





Josra www.josra.org

Atmel





Joint Open Source Roadmap Alliance





YXLON

Technology with Passion









Continuous Delivery Pipeline

"Software as a factory"







Project planning

"No more" Gant charts





Educate developers Learn Software Craftsmanship

- Clean Code
- Test Driven Development (TDD)
- S.O.L.I.D. principles
- Design Patterns
- Refactoring
- Frameworks
- Know your tools



S.O.L.I.D.

Principles

"This is about caring for your code"





Test setups

Test robot for dynamic test and fixed hardware for static test





Monitor "everything"

Fast feedback to developers











Atmel START

Continuous Integratio	on (CI)	MCU production BuildMaster Jenkins → Pipelines → ACME → .	ACME Frontend →		
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Atmel START Continuous Delivery (CD)

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Atmel START

Continuous Deployment





Current Status

It's fun to develop software

- ~110 persons in MCU Tools department
- ~1400 users on internal Jira ALM
- ~350 developers uses Stash/Git SCM
- ~1400 build jobs executed daily
- Quality of Atmel Studio is much better
- Release cycle is shorter
- Management has initialized a program to roll out company wide
- IT-Operations are embracing the idea of DevOps
- Several departments look to the MCU Tools department for adapting the new workflow





Statistics

- ~ 800 users start Atmel Studio each hour on working days
- ~ 100.000 unique ip-addresses uses Atmel Studio each month

- ~ 600.000 downloads of Atmel Studio 6.x
- ~ 90 extensions in Atmel Gallery
- ~ 25.000 extension downloads pr. month



Vision (today)

Looking to the future

• Deploy these ideas to all 600+ software developers in Atmel

- Higher rate of deployments (Continuous Deployment)
- DevOps NoOps
- Extensive use of cloud bases services
- Use of Software Containers
- Hardware Abstraction
- Dynamic build jobs creation



Continuous Innovation

The "Final" evolutionary step

- Feature Toggles
- A/B Testing
- Usage metering
- Direct feedback from the market

"If I'd asked my customers what they wanted, they'd have said a faster horse"

- Henry T. Ford

"Customers don't know what they want. It's very hard to envision the solution you want without actually seeing it."

- Marty Cagan





Take-Aways

Lessons learned

- Don't underestimate the work needed to change old habits and behaviours
 - this requires **communication and education**
- People tend to forget and stray off into new directions as time goes by
 this requires repeated update of knowledge

• We don't know what you want

... but we know **you want it** as code



Questions





Remember to rate this session

Thank you!

Let us know what you think !





Join the conversation #gotocph

Conference: October 5-6 // Workshops: October 7-8, 2015