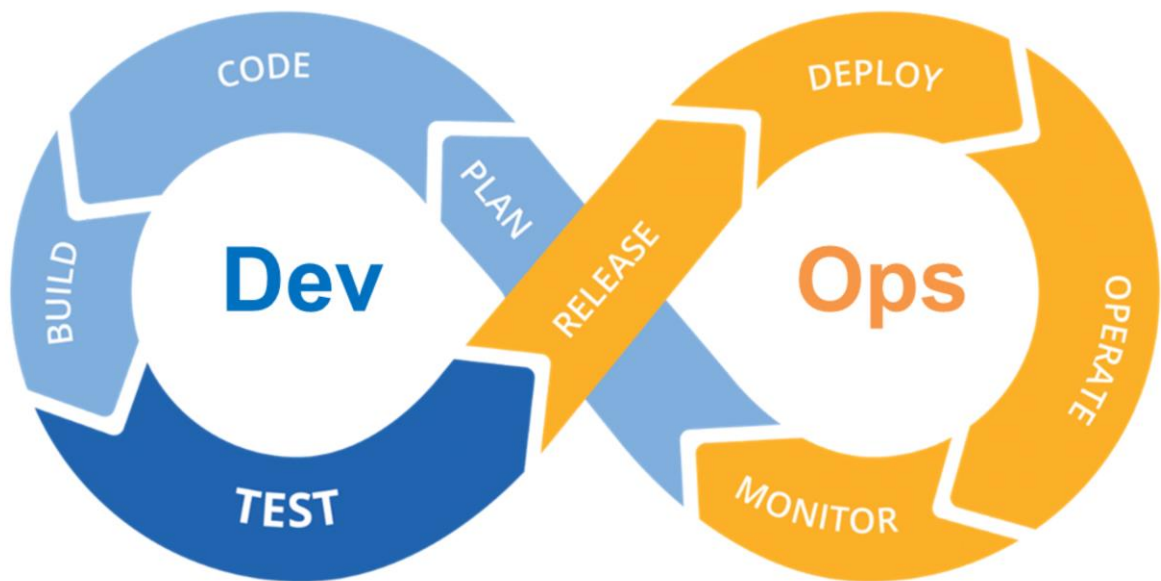


# Introduction to DevOps with GeneXus

*GeneXus™ 16*



DevOps implies a group of agile practices that combine the development of “Dev” software and the information technology operations known as “Ops”, in order to shorten the life cycle of system development and to be able to continuously offer software.

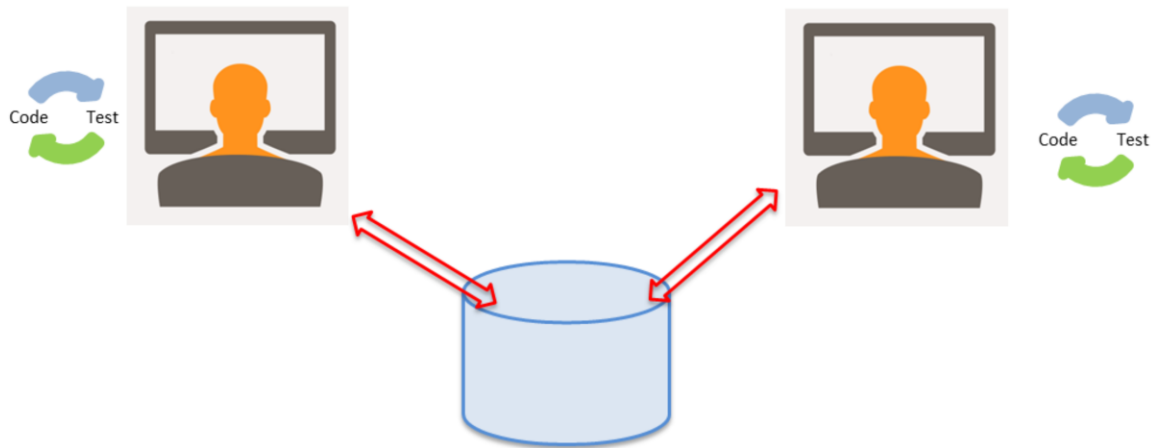
Integrating all tasks within a continuous cycle enables companies in the field of system development to benefit from market opportunities faster and also to reduce the time necessary to include customer answers, thus enhancing their experience with the software they use.

Let's see it in an example.



A developer creates a functionality... In a cycle where he codes and tests until he's satisfied with what he did....

Meanwhile, another developer worked on another functionality... in his development/test cycle until he is also satisfied with what he did.



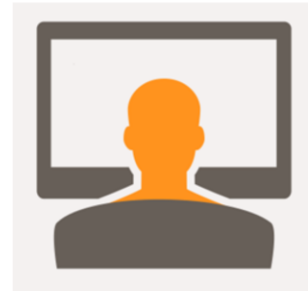
What happens when we want to INTEGRATE the work of both developers so that both functionalities are included in our next release?

They will both try to upload their functionalities to GeneXus Server, but there will probably be many conflicts and more so if these developers worked independently for a long period of time. Maybe they both defined objects with the same name and different purpose; maybe one of them modified existing objects by removing things that the other developer used, etc.

**“If something hurts, do it more often.”**

- Martin Fowler

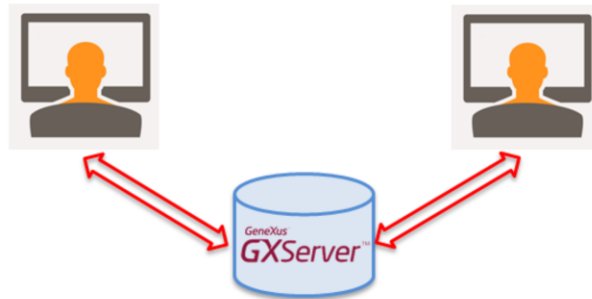
Resolving integration conflicts is difficult and troublesome...



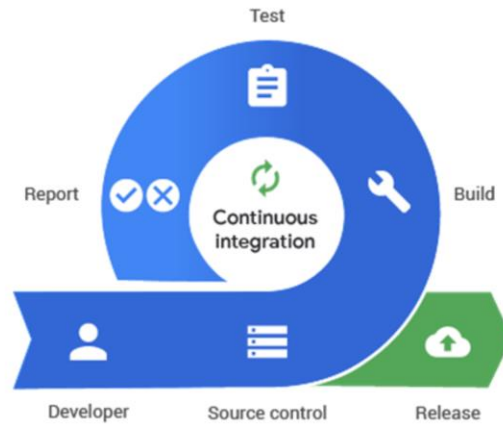
And once it is integrated and at least compiled, it is necessary to test if everything was integrated correctly and whether nothing was lost when resolving integration conflicts...

## Continuous Integration

- Practice where members of the development team integrate their work frequently, at least daily.
- Every integration is verified by an automatic build (including testing) that detects integration errors as quickly as possible.



The idea of continuous integration is that work is integrated frequently, so as to avoid conflicts as much as possible. If conflicts do occur, they will be small and easy to solve.

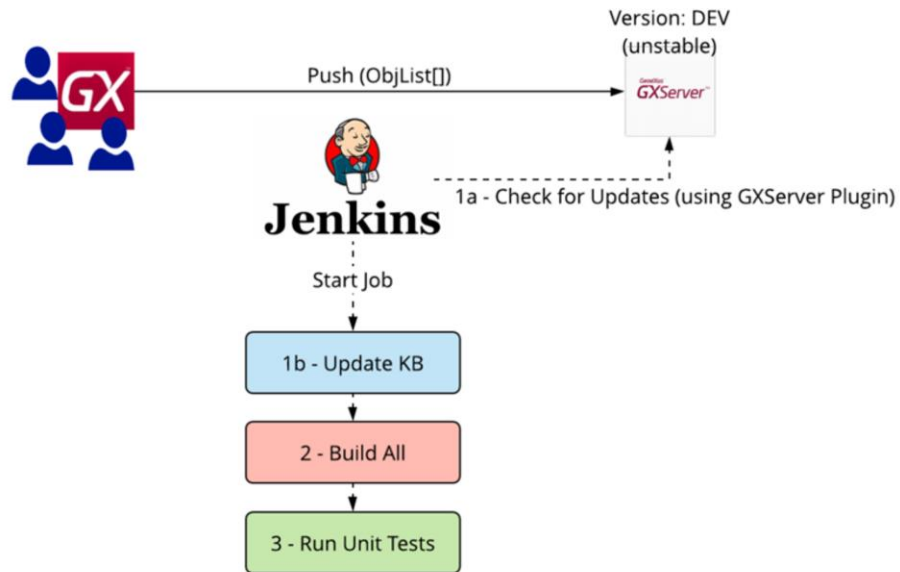


To detect these conflicts early, the build must be automatic so that we may confirm that the integrated KB specifies and compiles following an integration, in addition to validating that tests are also automatic, in order to make sure that something that was already working has not stopped functioning.



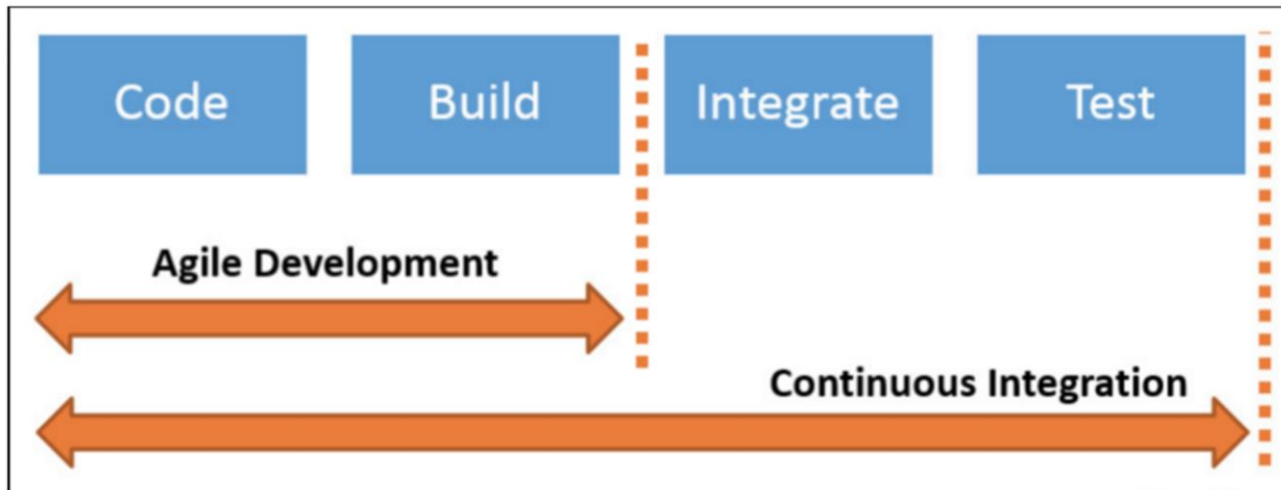


To this end, we'll use GeneXus Server and Jenkins, which is a continuous integration engine and the tool that will organize the process.

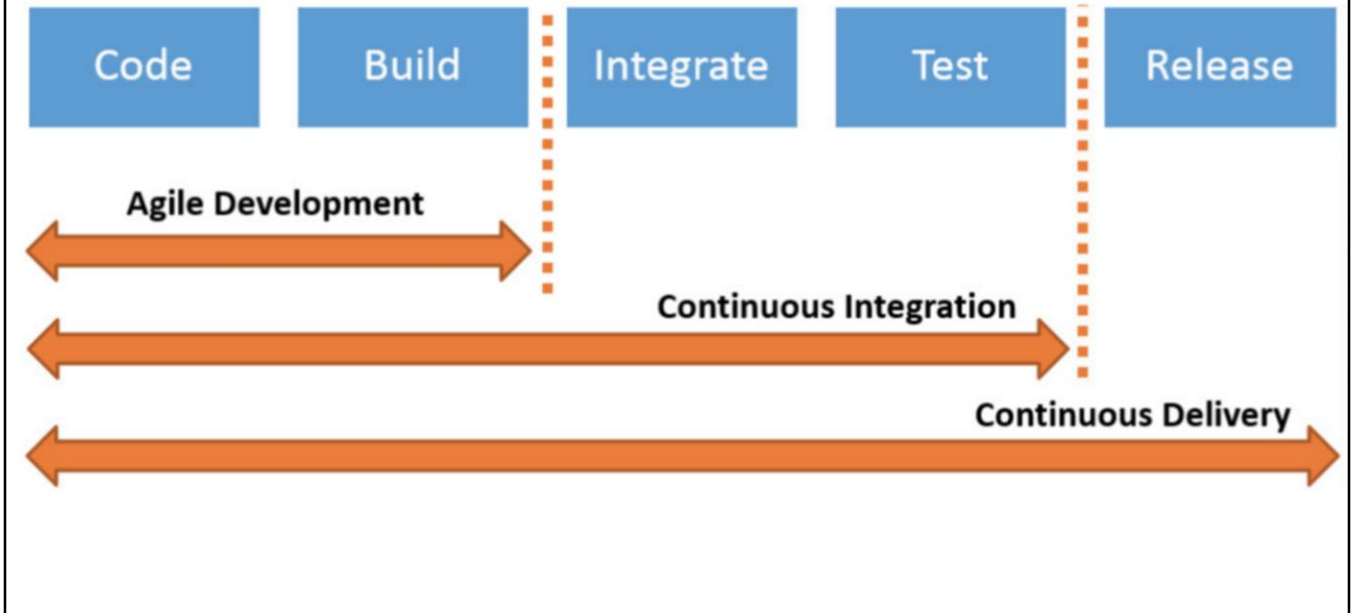


In summary, on every commit each developer makes, at least the following automatic process is to be carried out: Update the KB, Build All and Run the tests.

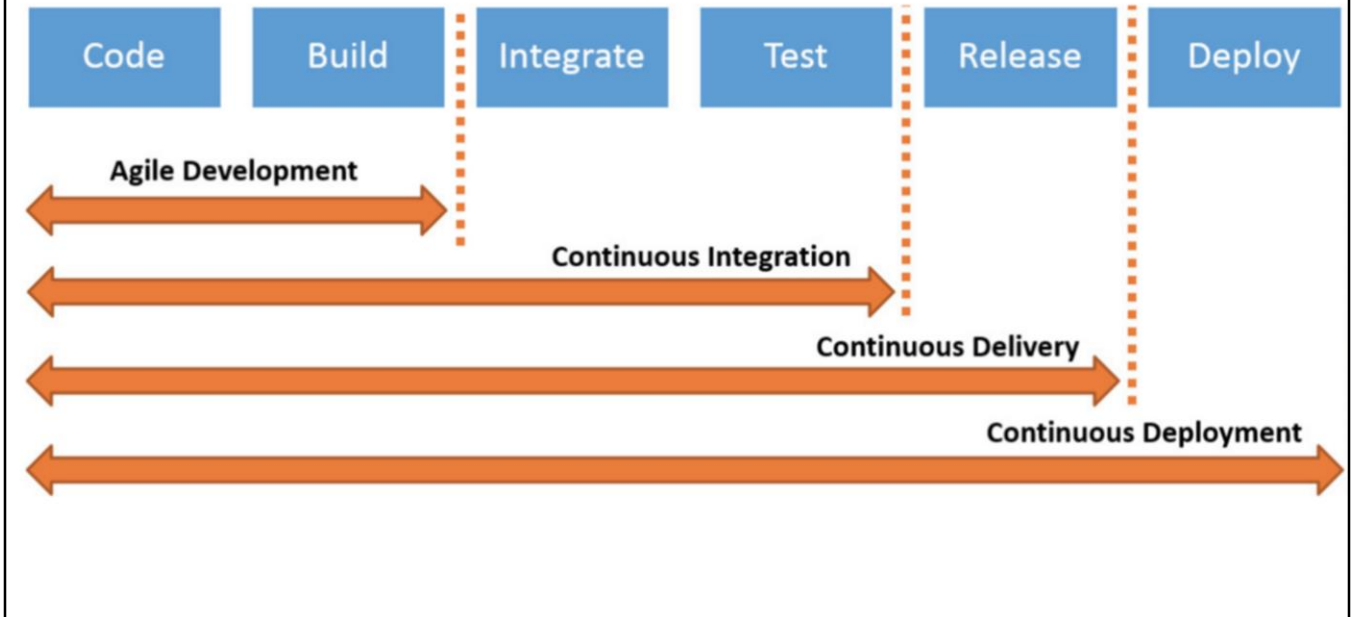
If everything goes well, the build is successful and you can move forward; otherwise, you have to stop and resolve the conflict.



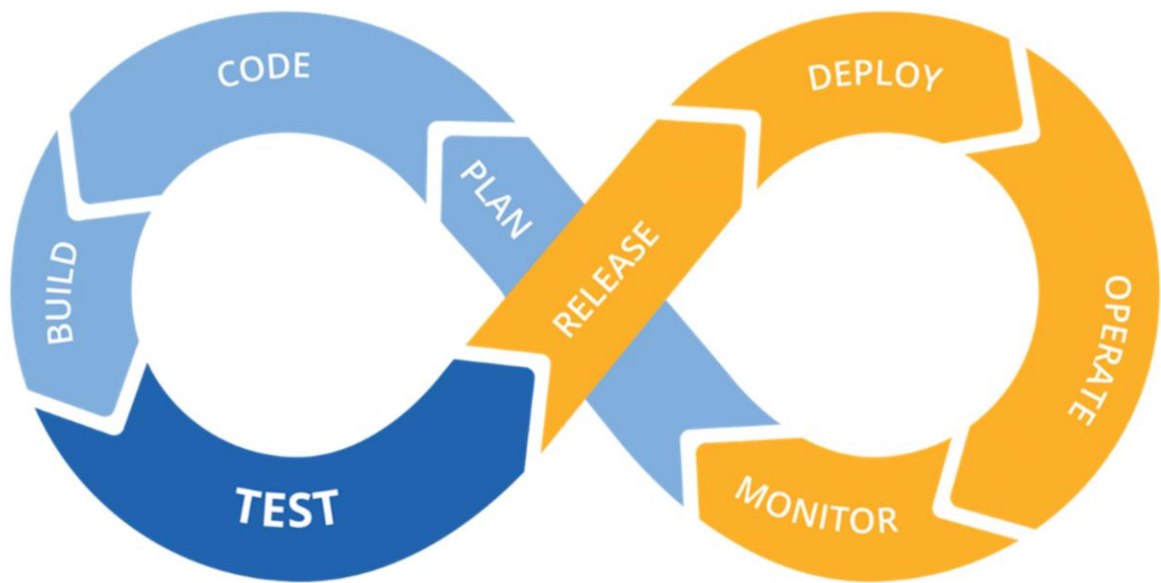
Continuous Integration occurs when we add integration and validation automation to our process.



If we add to that the automation of the release build, so that deployment can later be made with one click... Continuous Delivery is achieved.



When our process is so smooth/automatic that we can deploy automatically, we achieve Continuous Deployment.



And when we include in our process the operation and monitoring of the deployed application ... which generates information that feeds back into the plan of what features should be developed afterwards, we achieve a DevOps process.

More info:

<https://wiki.genexus.com/commwiki/servlet/wiki?40706>

You will find further information on how to use the DevOps methodology in GeneXus at the following wiki link:

<https://wiki.genexus.com/commwiki/servlet/wiki?40706>



Videos

[training.genexus.com](https://training.genexus.com)

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We have seen then the facilities of version 16 to create and run automatic tests, which is a key element in a good engineering process.