SOFTWARE ENGINEERING

Staging environment vs Production environment

Asked 8 years ago   Active 10 months ago   Viewed 84k times

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I work for a company where we build enterprise applications, and we maintain three environments: *development* (or *dev*), staging (or *stage*) and production (or *prod*).

The meaning of *dev* is intuitive: it's the environment used during development of the application.

What's the difference between *staging* and *production* environments?

enterprise-architecture	java-ee	enterprise-development

edited Feb 11 '17 at 22:03

nbro
287 3   15

asked Nov 4 '11 at 20:26

rdasxy
2,983 6   25   38

5 Answers

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For smaller companies (it's not clear how big yours is), three environments (dev, stage, production) are common. Larger companies will often have a QA environment between dev and stage.

These normally break down as follows:

dev: Working code copy. Changes made by developers are deployed here so integration and features can be tested. This environment is rapidly updated and contains the most recent version of the application.

qa: (Not all companies will have this). Environment for quality assurance; this provides a less frequently changed version of the

staging: This is the release candidate, and this environment is normally a mirror of the production environment. The staging area contains the "next" version of the application and is used for final stress testing and client/manager approvals before going live.

production: This is the currently released version of the application, accessible to the client/end users. This version preferably does not change except for during scheduled releases.

answered Nov 4 '11 at 23:37

Mike
1,836   1   12   7

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7   This is right in terms of the software. There is also the data: dev and qa are connected to test databases so the developers and testers don't have to worry about introducing changes, while staging and production use production databases. Think of a bank. – Juan Lanus Jul 19 '13 at 11:58

4   There is another dimension: who are the users? dev: the developers; qa (I prefer qc): the testers; staging and production: actual users. In business applications with mean databases, the developers are not allowed to see let alone touch production databases, they are furnished with anonymized versions. – Juan Lanus Jul 19 '13 at 12:05 ✏

3   @JuanLanus: Usually, the staging environment will use a *copy* of production data - you typically don't want to change production data from staging. – sleske Sep 6 '14 at 21:40

1   @JuanLanus: Sorry, I meant "you do not want edits in the staging environment to be visible in the prod environment" - hence staging uses a copy of production data, but (typically) an editable copy. – sleske Sep 8 '14 at 7:15

3   We call qa 'test': dev (me), test (team), staging (client), prod (world) – Rudie Oct 18 '14 at 12:36

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I am a bit surprised that a test environment is not present as well, as a location for code to go to before being promoted to staging.

To answer the question:

A stage environment should mirror the production environment as closely as possible.

It is used for verification of deployment procedures - making sure that when code is production ready it can be deployed without causing problems.

That is, code goes to staging - this is comprehensively tested and regressed to ensure that deployment went as planned (and to iron out any issues if it didn't).

answered Nov 4 '11 at 20:31

1   Exactly - it exists to take code out of the dev environment into a more controlled environment, among other things, showing up any dependancies missed in documentation, and any 'well it worked on our machine' embarrassment on the live/prod environment. – Danny Staple Nov 4 '11 at 23:40

This has nothing to do with the question though... – nbro Aug 24 '16 at 16:13 ✎

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The stage environment is a preprod environment that mirrors production. Often, it may have some production data so that a test group composed of actual users and QA testers can confirm that the pre-released code base/data will deploy and work properly in a prod-like environment, usually through scripted use cases and regression tests.

As @Oded notes, it's usually common to have a QA environment that QA testers use to test the code.

answered Nov 4 '11 at 22:33

JW8
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My experience with US Government/Department of Defense IT is that:

1. DEVELOPMENT/TEST is for developers and application developers. They build and test applications away from enterprise systems.

2. When the applications are completed, they will be deployed to the IT environment into the PACKAGING server(s).

3. From that point on, the applications are supported by IT, migrated into STAGING (which enables IT to develop/check implementation guidelines, configurations, etc.). User testing may happen at this stage to some degree to verify that the application will function as expected in a system that replicates PRODUCTION.

4. If all of the test plans are completed and they are good to go the application will be moved to PRODUCTION and go into the sustainment (i.e., operations and maintenance, or O&M) mode.

5. New updates from the developers will also be deployed into PACKAGING and the process continues.

edited Sep 6 '14 at 19:12   answered Oct 8 '13 at 13:40

gnat   Cmac
21.6k   16   89   227   **39**   1

Oct 8 '13 at 14:04

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As a web developer, there are mainly three environments to consider *practically*:

Production: The environment configured to host the final release version of a product targeting end users. It is optimized for security and performance. It is hosted on a live server. It requires alerted and urgent support. It is data-critical. Therefore, its data is backed up regularly. It also involves risk management and disaster recovery. The production environment is configured to show friendly errors to end users.

Staging: The environment configured to host the release candidate of the application after declaring a code freeze. It targets project manager/owner alongside the development team to agree upon the scope of the release candidate. It involves quality assurance and also the development team to do the final fixes and final furnishing before releasing to production. The best practice is to mimic the production environment by using the latest data available from a live DB copied from the production environment. Normally, the staging environment is only accessible by the internal team and stakeholders, therefore, it is either secured on a public server or published on an intranet environment if all stakeholders can access a local network. The staging environment is configured to show medium or full technical errors.

Development: The private environment configured by a single developer on his machine to check his/her own work during a development cycle, normally, called a sprint in a scrum environment. The development environment is configured to show full technical errors.

answered Jan 6 at 9:52

Sh   **Shadi Namrouti**
    121   2

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1   I'm pretty sure that theres one environment missing. Whether you deploy a web inhouse or a customer is involved. In both cases a UAT environment is very useful, if not absolutely required, to ensure everything works and looks like expected and agreed. You should not go to staging or further without quality tests. – Steve Rakebrandt Nov 17 at 8:50 ✎

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protected by gnat Jan 6 at 11:19

Thank you for your interest in this question. Because it has attracted low-quality or spam answers that had to be removed, posting an answer now requires 10 reputation on this site (the association bonus does not count).