

Designing a Robust Environment: Environment Isolation

Sarah Scher

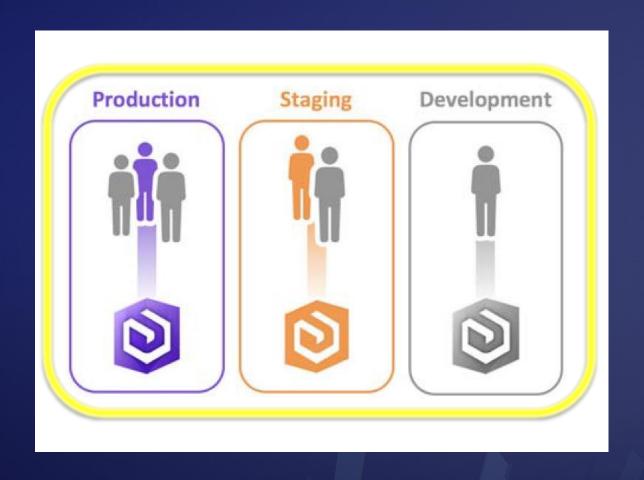








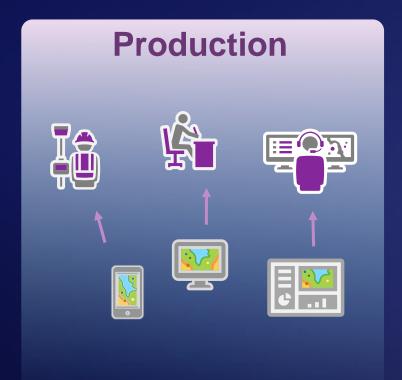




Best Practice: Environment Isolation In your organization

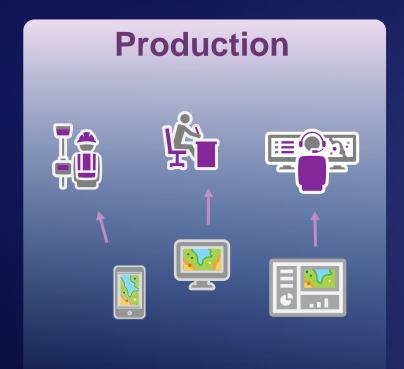


Best Practice: Environment Isolation In your organization





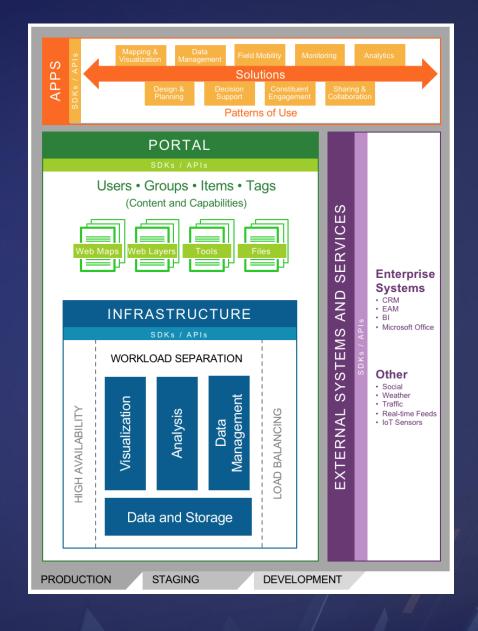
In your organization





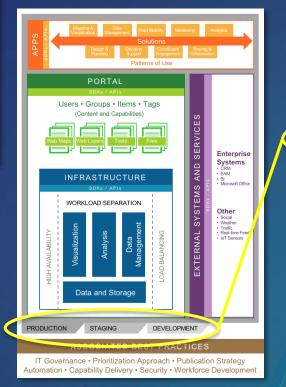


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Environment Isolation May 2018

Isolating computing environments is a recommended approach that contributes to system reliability and availability by creat separate and distinct systems for operational, testing, and development activities. <u>Environment isolation</u> reduces risk and protects operational systems from unintentional changes and negative business impacts.

Introduction

It is highly undesirable for an operational system to fail to deliver the functional or performance capabilities that customers expect, whether because of resource contention, system failures, outages, or other issues that could have been avoided. Environment isolation plays a crucial role in system design because it insulates the different computing environments from unmanaged change, helping maintain the functionality and performance that users expect in the system.

Recommendations

System changes are inevitable. It is a recommended practice to manage these changes in isolated computing environments, which helps mitigate the risks associated with change and contribute to the delivery of stales, extensible, and help performing business capabilities. Risk meets to be defined and documented in a contract or Service Level Agreement (SLA) between technology service providers and business stakeholders. Within this contract, expectations for system reliability, in measurable terms, will guide how environment isolation and its governance will support those expectations, implementing at least three loadied computing environments (production, staging, and development) is an important element to meeting SLAs and is an essential practice for enterprise systems management (Figure 1).

A production environment is the "live" system that supports end users. Uptime requirements are defined by an SLA and are

supported by appropriate change management and governance. Software, application, configuration, or network changes should never be made to the production environment without first being tested and evaluated in a staging environment.

A staging environment is a mirror of the production environment, and it provides a venue to vet system changes and ensure system quality before deploying changes to production. User acceptance testing, performance testing, load testing, and training are often performed in the safety of a staging environment without the risk of negatively impacting the production system.

Figure 1 - Recommended (minimum) com

A development environment is a workspace where developers and analysts can incover, amange content, and make changes without impacting a large audience. This dedicated server environment is typically used for unit testing, constructing business workflows, or reading new capabilities such as applications, services, data models, or geoprocessing models. Any group or organization that is developing new capability should have a development environment for these activities. The size and complexity of the environment will depend on the level of risk generated by changes, the number of creators, and the potential impact of system outages and downtime. Implementing separate computing environments enables organizations to deliver a stable, extensible, and high performing system. SLAs should be created and publicized to support stakeholder expectations. The proper execution of change management between computing environments helps shield the system from unexpected failure and associative business disruption.

¹ Many organizations may choose to implement each of these activities in separate computing environments instead of in a single staging environment. Many risk adverse organizations will have upwards of four, five, and six or more different computing environments to support the fit delivery needs.

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Testing, and Monitoring

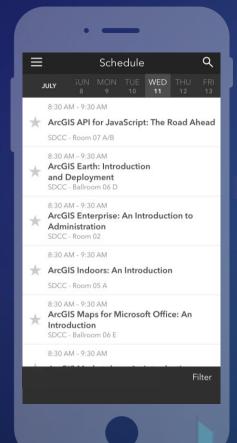
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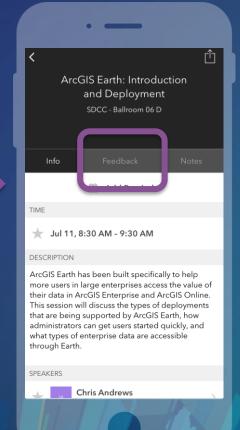
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