

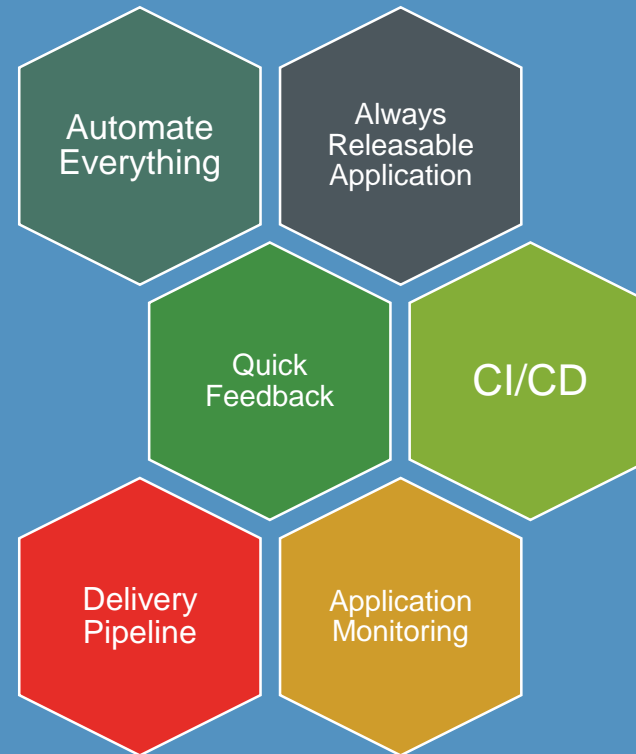


BSI EMEA User Group April 2018

BSI & Openshift - Managing Service Levels



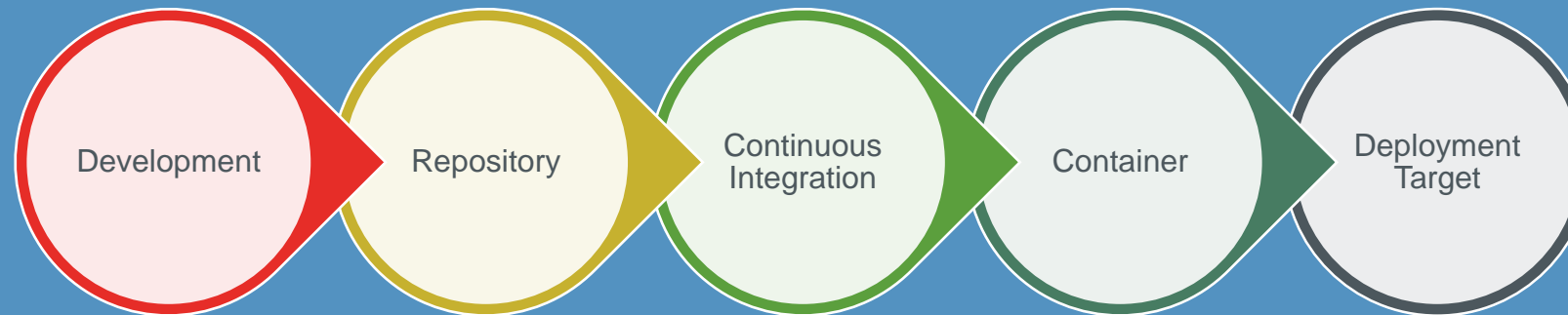
DevOps (development and operations) is an enterprise software development phrase used to mean a type of agile relationship between development and IT operations. The goal of DevOps is to change and improve the relationship by advocating better communication and collaboration between these two business units.



Devops Pipeline breaks down software delivery into processes - build automation and continuous integration; test automation; and deployment automation



Containers:/Dockers: A container image is a lightweight, stand-alone, executable package of a piece of software that includes everything needed to run it: code, runtime, system tools, system libraries, settings.

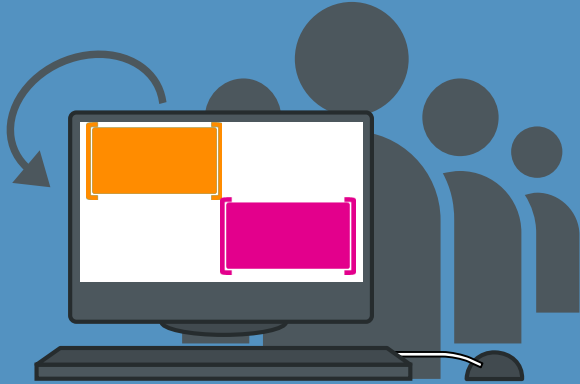




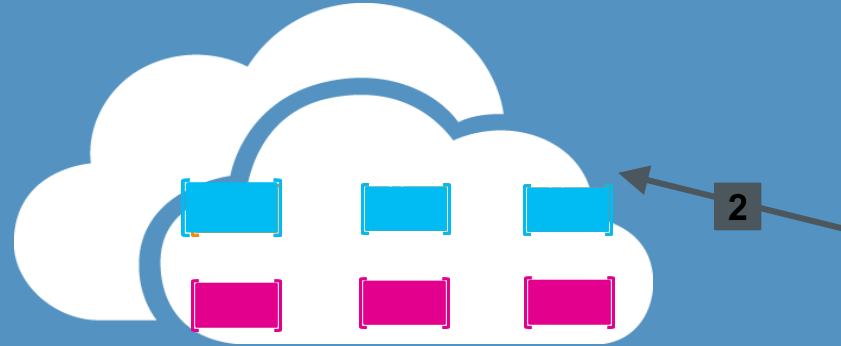
Devops Process with Containers

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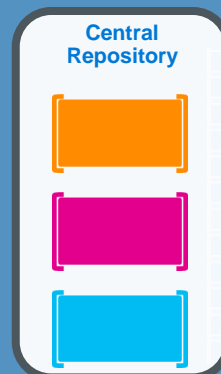
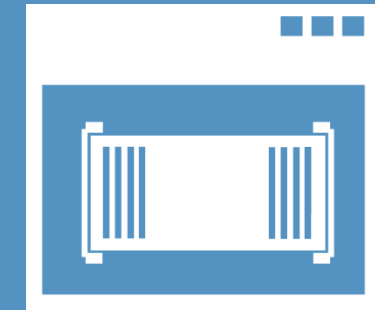
Developers update, iterate, and deploy updated containers



Developers build and test apps in containers, using development environment i.e. Visual Studio



Operations collaborates with **developers** to provide app metrics and insights

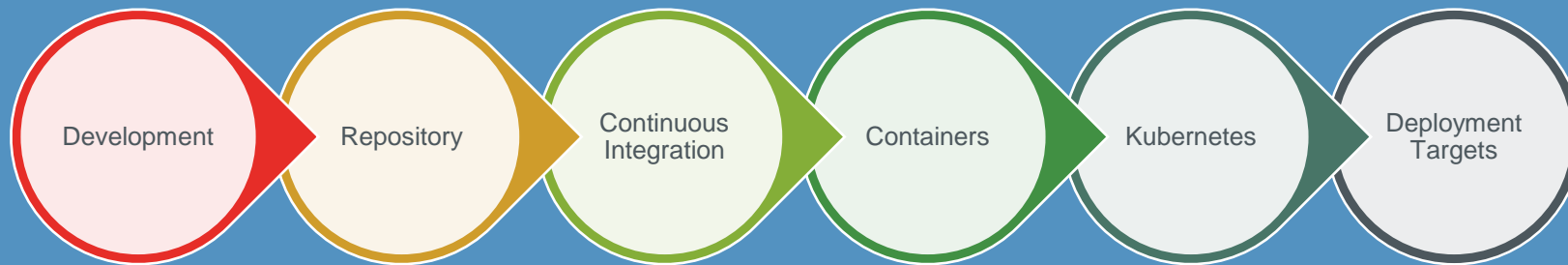


Containers pushed to central repository

Operations automates deployment and monitors deployed apps from central repository



Kubernetes: Kubernetes is a portable, extensible open-source platform for managing containerized workloads and services,

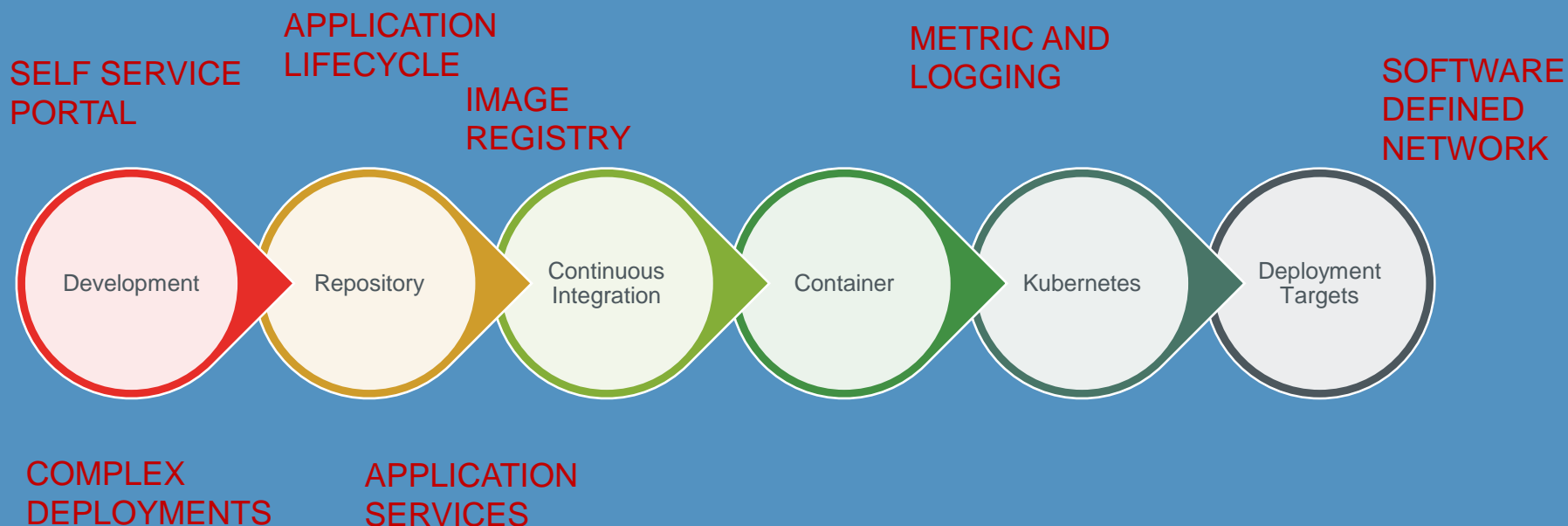


A Kubernetes **namespace** provides a mechanism to scope resources in a cluster. In OpenShift, a project is a Kubernetes namespace with additional annotations.

A Kubernetes **service** serves as an internal load balancer. It identifies a set of replicated pods in order to proxy the connections it receives to them



Red Hat **OpenShift** is a PaaS Solution and is a complete container application platform that natively integrates technologies like Kubernetes—a powerful container cluster management and orchestration system. Red Hat OpenShift integrates the architecture, processes, platforms, and services needed to empower development and operations teams. It deploys reliably across environments, and it lets you meet customer demand while reducing infrastructure costs

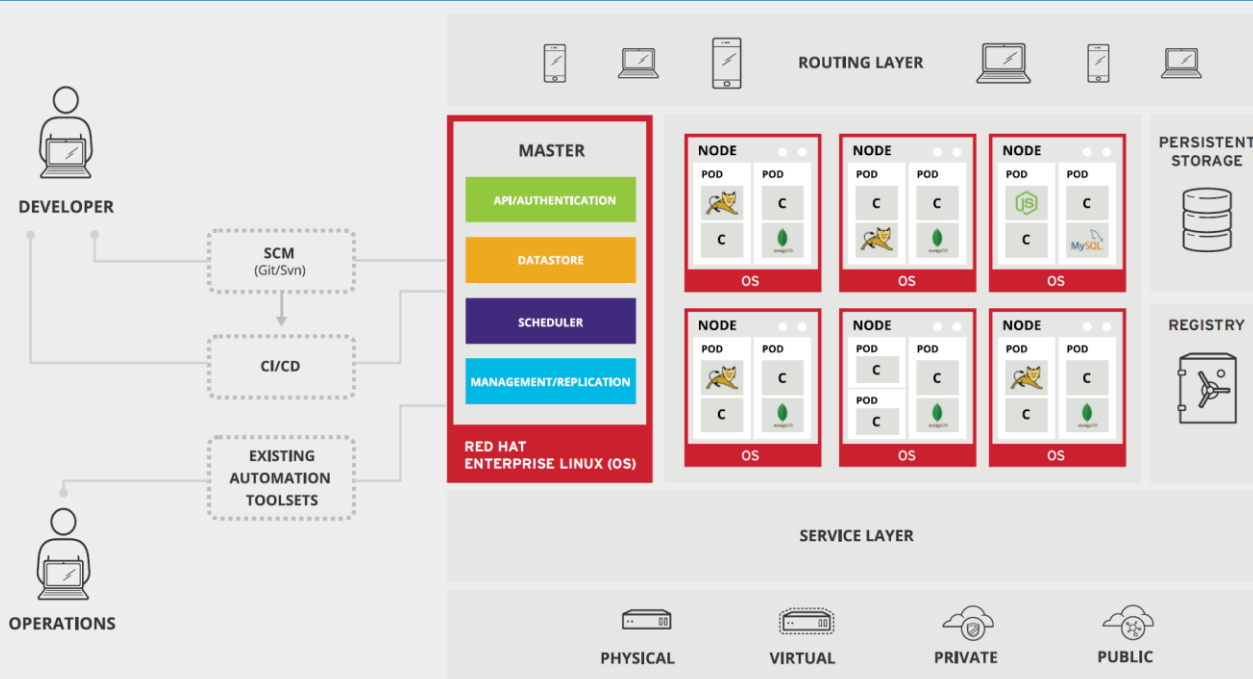


An **OpenShift** route is a way to expose a service by giving it an externally-reachable hostname like `www.example.com`.



OpenShift Container Platform Architecture

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OpenShift Container Platform gives IT operations secure, enterprise-grade Kubernetes for policy-based controls and automation for application management.

Cluster services, scheduling, and orchestration provide load-balancing and auto-scaling capabilities.

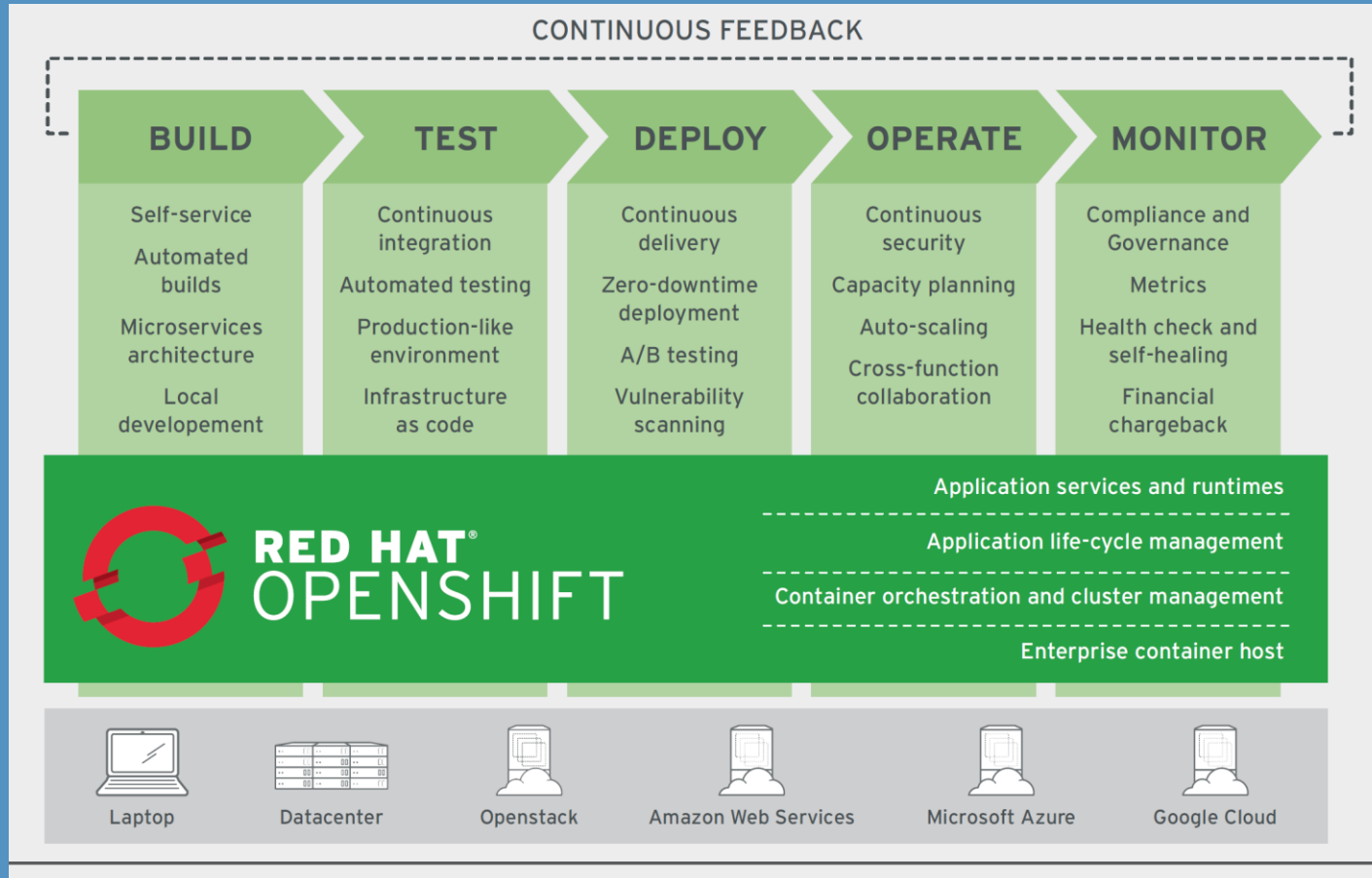
Security features prevent tenants from compromising other applications or the underlying host.

And because OpenShift Container Platform can attach persistent storage directly to Linux containers, IT organizations can run both stateful and stateless applications on one platform.



How Openshift Helps

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Red Hat OpenShift offers development and operations teams a common platform and set of tools as a foundation for building, deploying, and managing containerized applications on any infrastructure — on-premise or in public, private, or hybrid clouds.

*<https://www.redhat.com/en>



Enhanced multi-tenancy is enacted through simplified project management in a single Kubernetes cluster. OpenShift allows developers to work on multiple projects completely isolated from one another while sharing resources on a single Kubernetes cluster within the platform.

Users can manage separate projects easier and search for project details through a web console. The multi-tenancy capabilities lets developer teams access their own cloud-like environment to build and deploy apps.

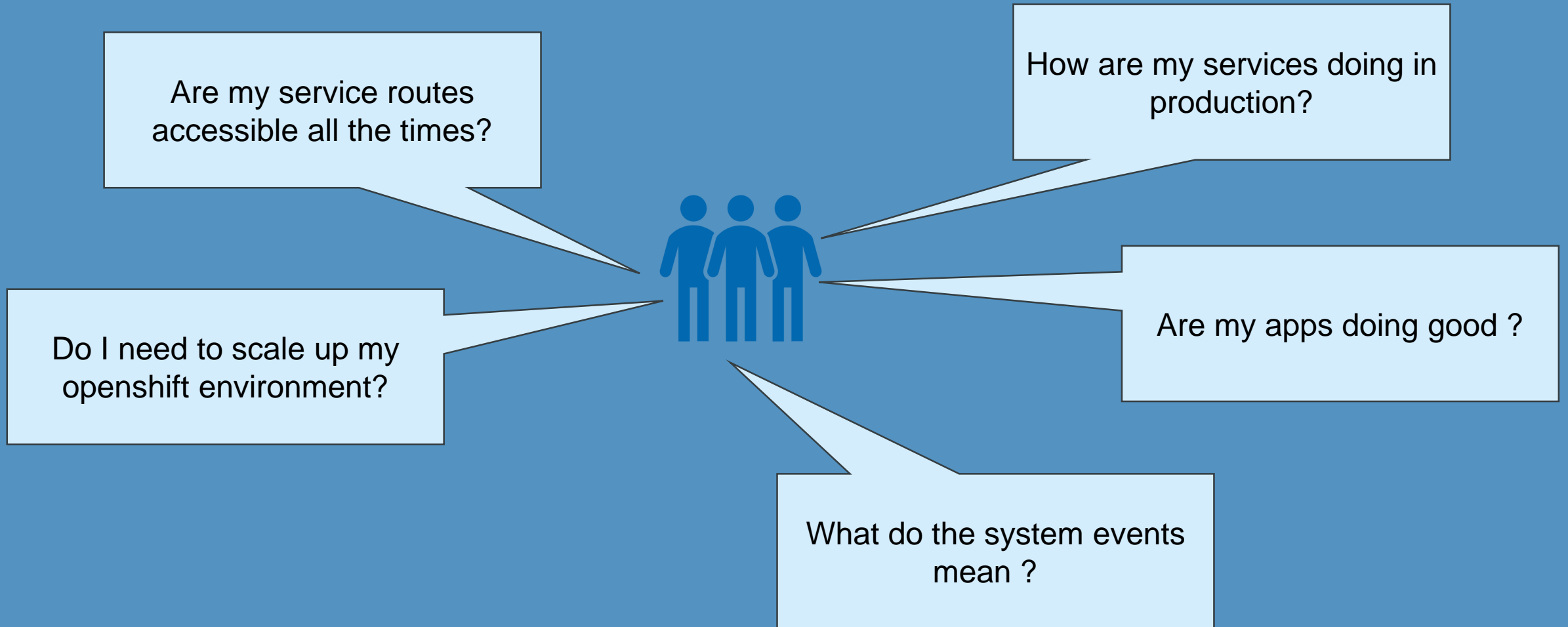
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Need for Control

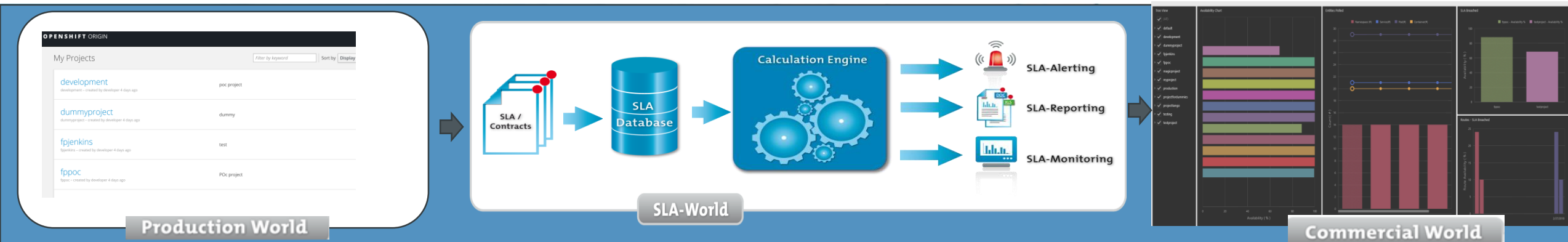
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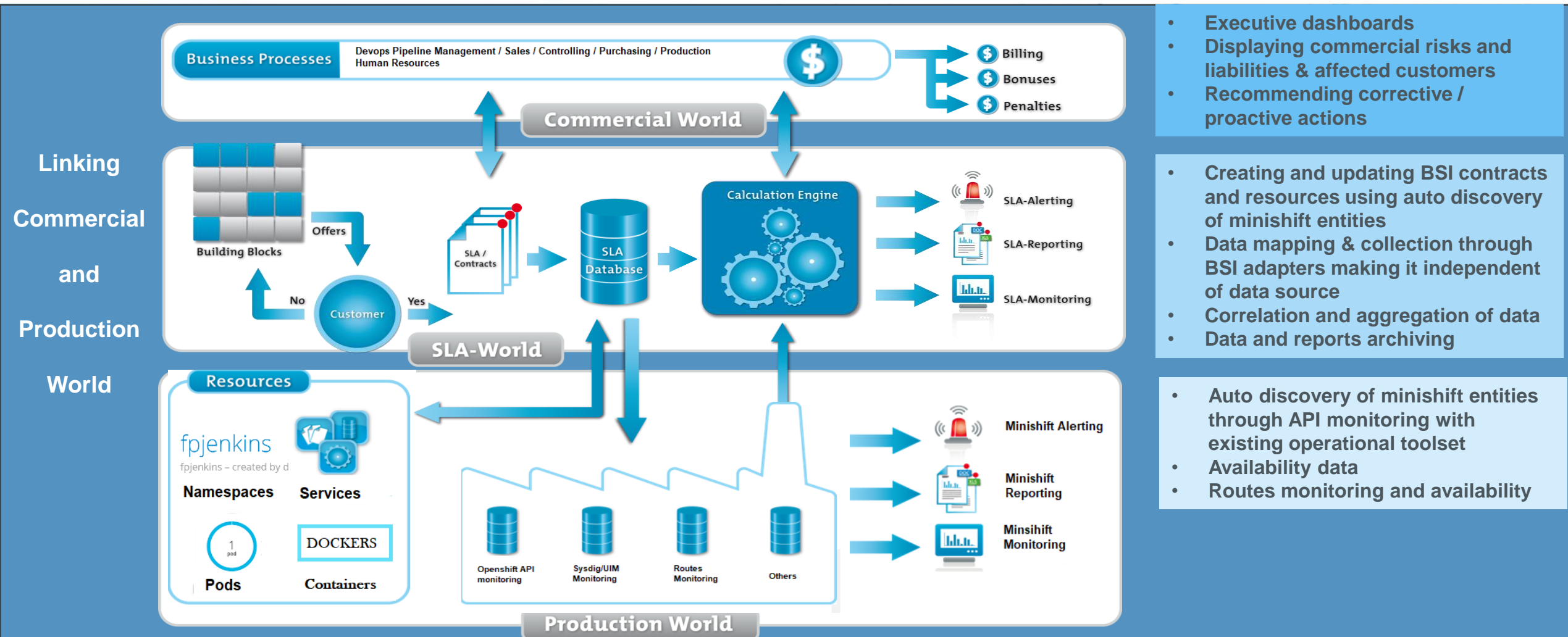
With Cloud/SaaS like solutions customers expect applications to have near-perfect uptime, high performance, and a bug-free experience.

But how can you achieve that without seeing how your services are performing in production?



Monitor the implementation of **Openshift environment** for projects, services and routes and report on the changes in **entities** or their structure, **health** of routes and the **availability against agreed service levels** using the **BSI system** for calculations and **dashboards** for presentation of result.

Complete process should be **automated**, the changes **auto discovered** in openshift environment, route availability **continuously monitored** and reports refreshed automatically ensuring **service levels are well reported and alerted**.

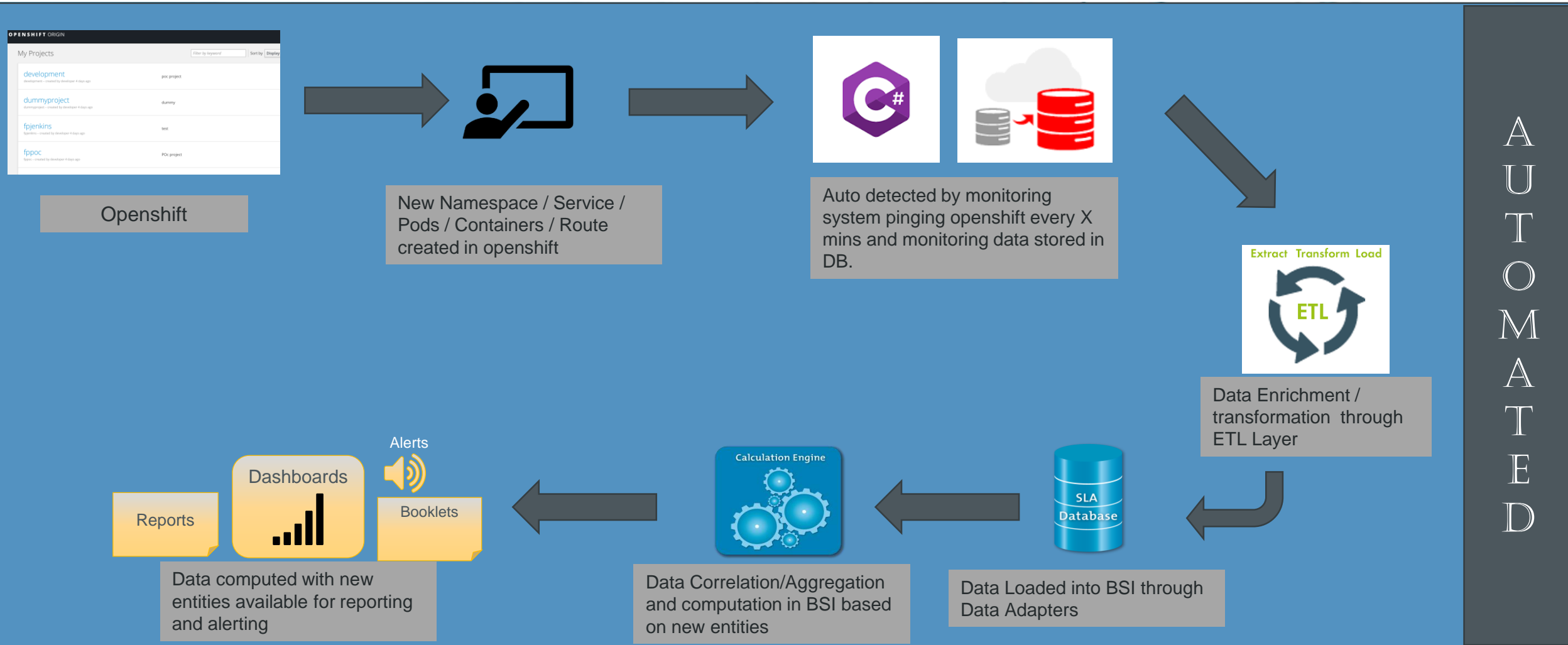






And how to do that

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BSI ADAPTERS

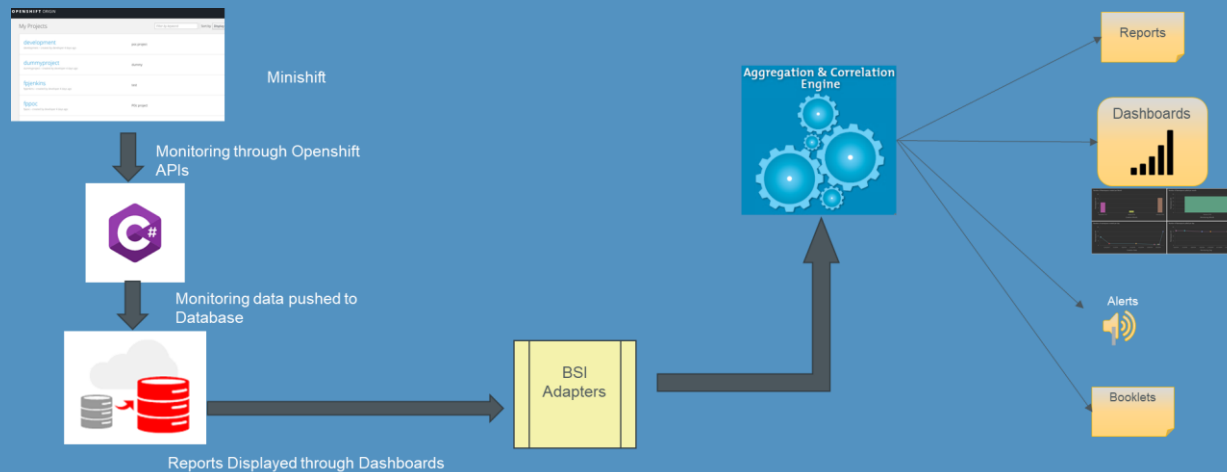
- Create Data into meaningful events to be further used by Calculation Engine
- Data History and events can be viewed in GUI
- External data can also be fetched if required

BSI Calculation Engine

- Aggregation & correlation engine capable of handling huge volume of data
- Business Hours/Local timezones , CMDB can be easily managed
- Version controled

Alerts and Reports

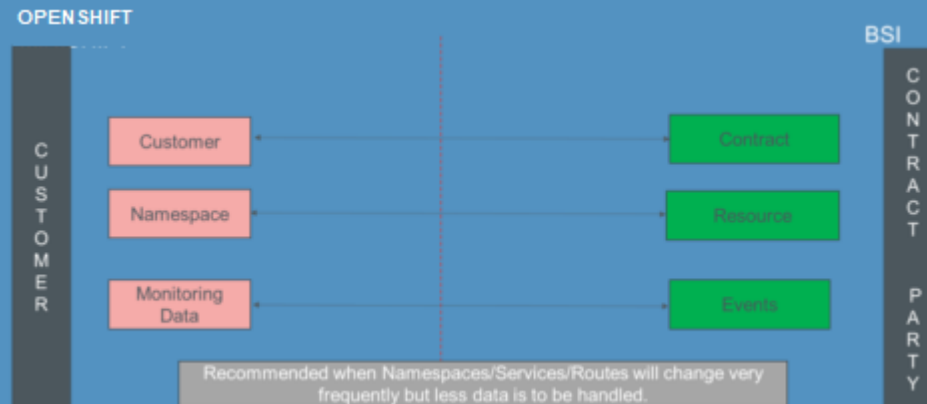
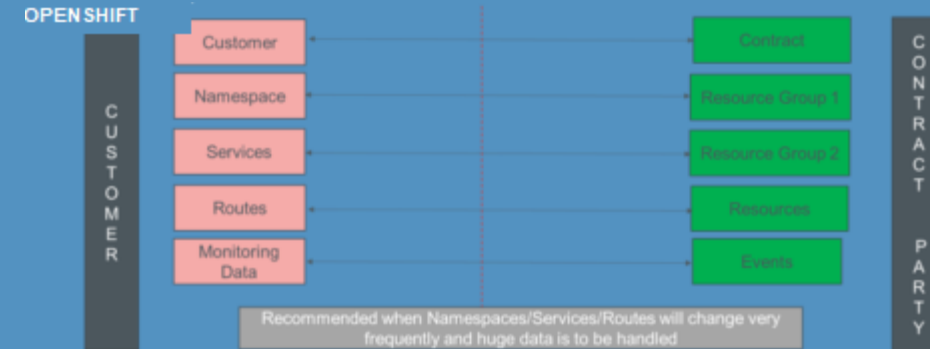
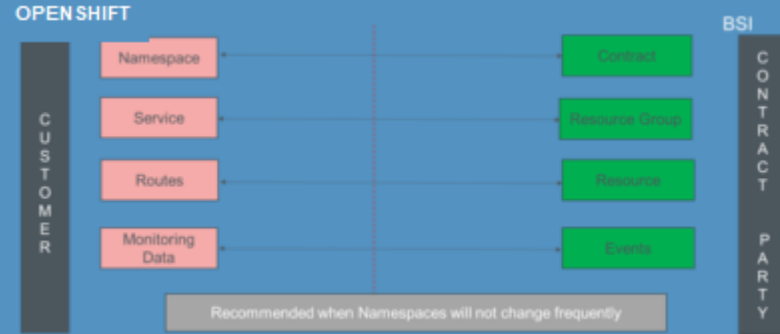
- Data Alerts in case of missing data or polling samples
- Reports in various formats – GUI, Booklets, Dashboards in pdf/excel/doc etc.
- Highly Customizable and dynamic





BSI Mapping Structure

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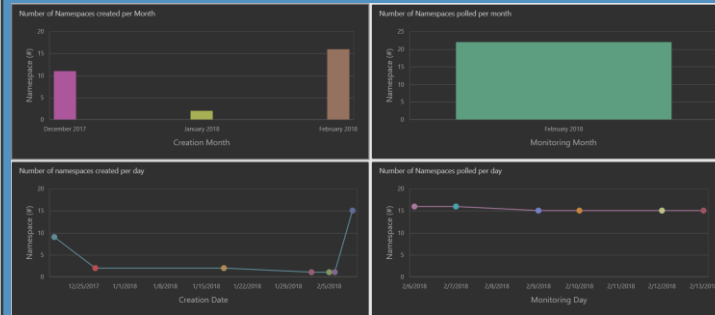


BSI design based on
process/data flow within
customers openshift
environment



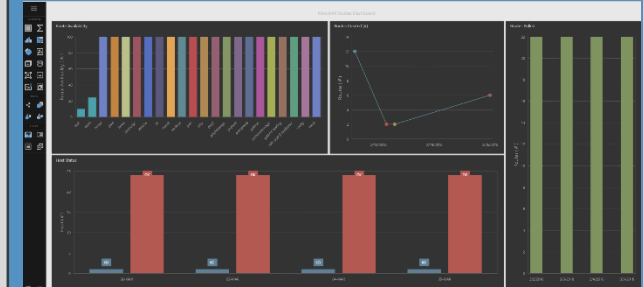
Dashboard : Namespaces

- Report on Number of Namespaces Created per month per day
- Report on Number of Namespaces Monitored per month per day



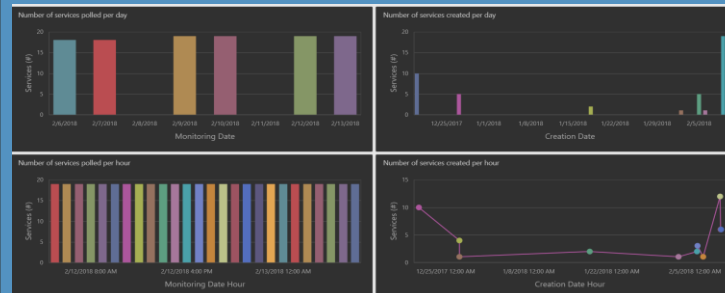
Dashboard : Routes

- Report on Route Availability.
- Report on Route created per day.
- Report on Host Status per polling day.
- Report on status of routes polled last 3 days.



Dashboard : Services

- Report on Number of Services Created per day per hour
- Report on Number of Services Monitored per day per hour



Dashboard : Autodiscovery

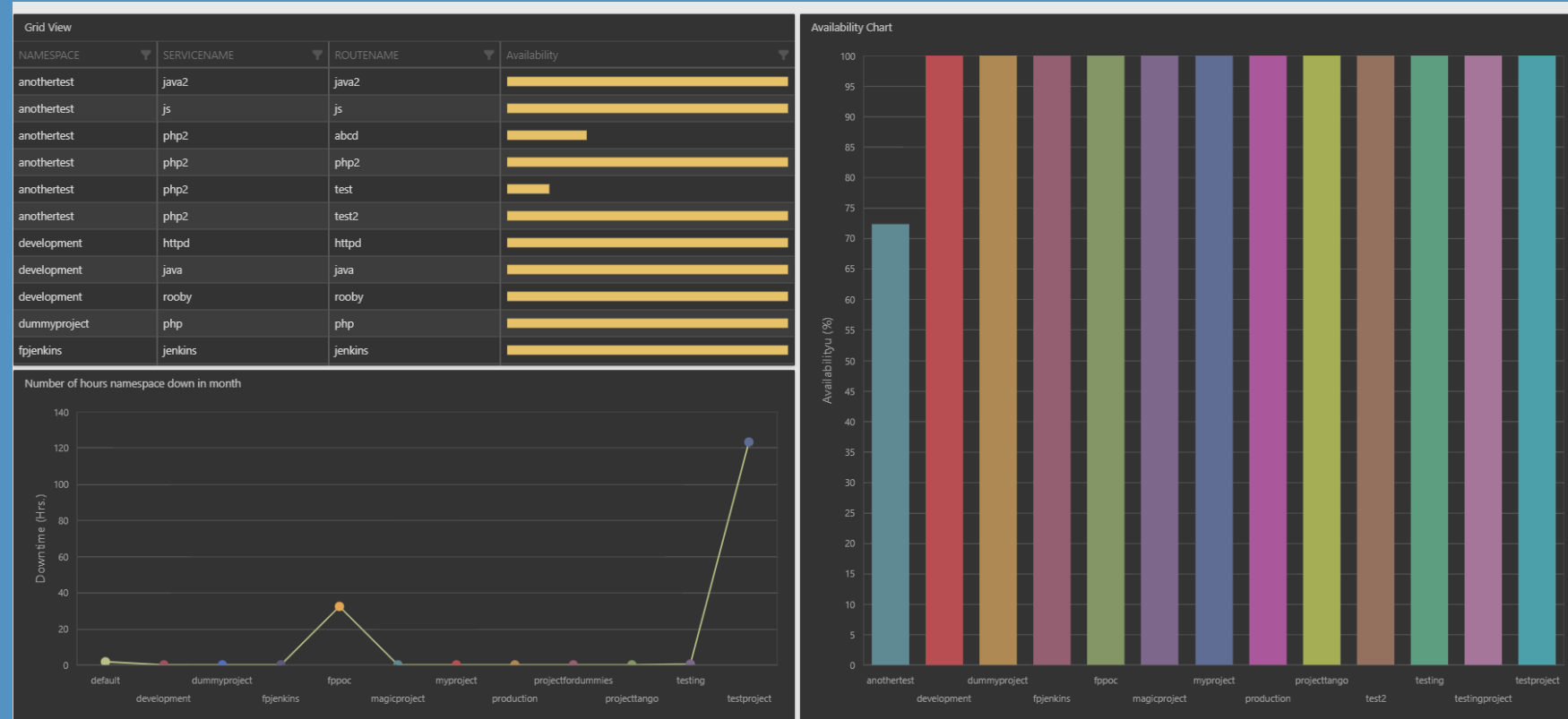
- Report on Entities added/Removed with the last action time
- Health Report on Running Status of Routes(Latest Polling Data)

The screenshot shows a table with columns for Entity Name, Namespace, Kind, and Status. The table lists various entities and their current status.



Dashboard : Availability*

- Report on Downtime in Hours per namespace
- Drill down of availability from Namespace → Services → Routes





Dashboard : Executive

- Tree view of all the entities.
- Drill down of availability from Namespace → Services → Routes. Controlled by tree view.
- Number of entities polled per polling day.
- Report on breached SLA's with drill down
- Report on routes – SLA Breached





Example Scenario - Service addition

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The BSI benefits

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Health status of openshift entities



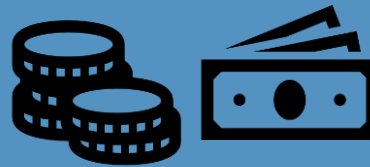
Taking Proactive Actions (much more than current data) and automating Remedial Actions



More Savings with less breaches



Provide Insight into Technical/Financial Decision Model



Respects containers' operating principles





Take your business to the next level

SLM@fusionPOINT.de +49 7543 926 1031



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