



Continuous Delivery @ SOLEIL

Soleil context

- 30 beamlines 24/7 operation since 10 years
- Small Control & Acquisition team
- High user pressure to regularly deliver new features
- Continuous Integration since 5 years
- Moving to Continuous Delivery

Continuous Integration

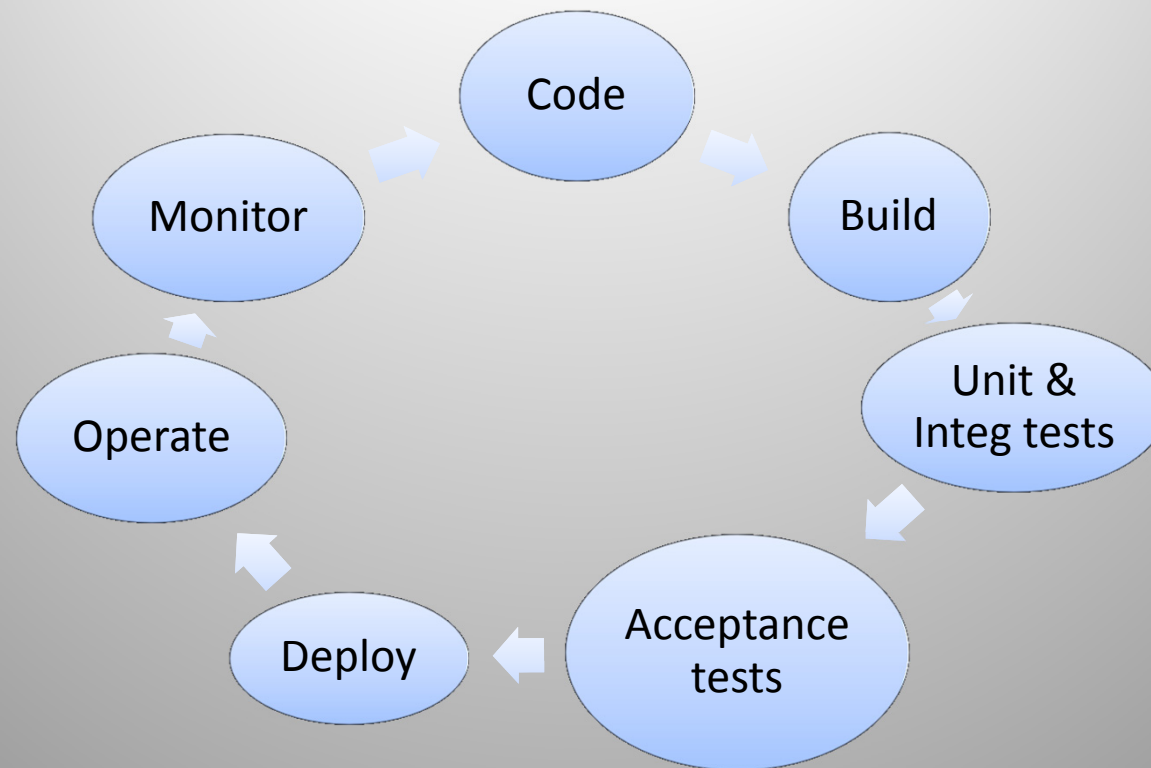
Detecting software defects at earliest stage possible

Version Control
System

Automated build

Team agreement

Continuous Delivery



Expected Benefits

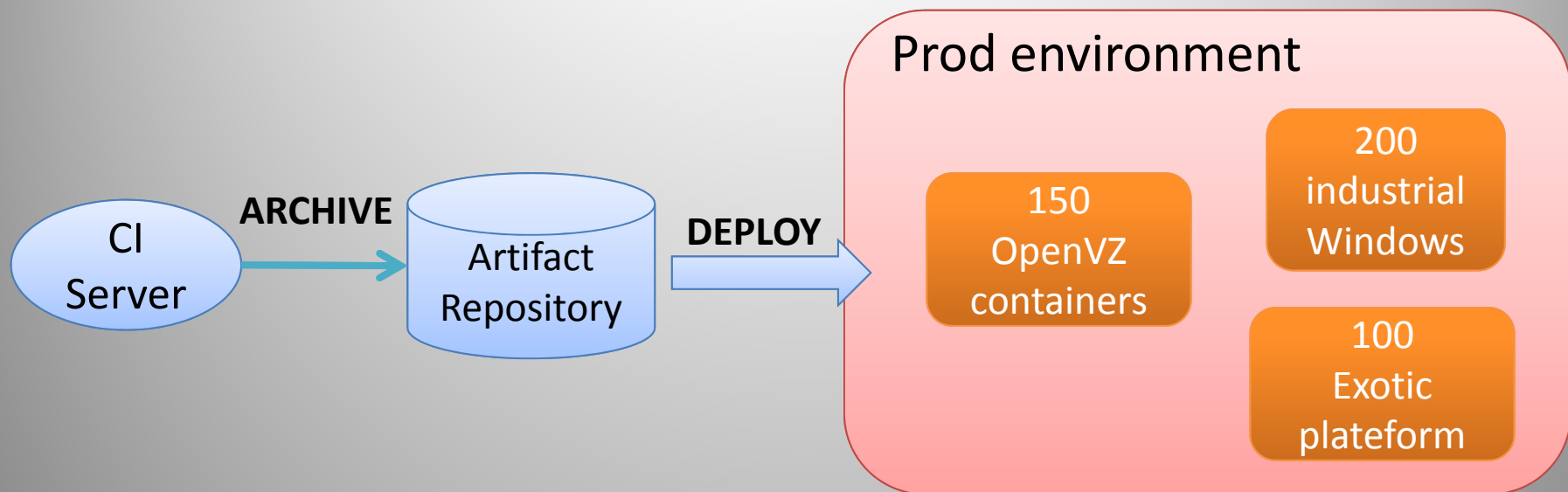
Reduce error-prone
Manual actions

Reduce Time to
delivery

Federate Team

Control changes
Reduce incidents

Our pipeline V1



Soleil issues

Many modules

Wide variety of production environments

Big packages
Too few deployments

Too heavy deployment pipeline

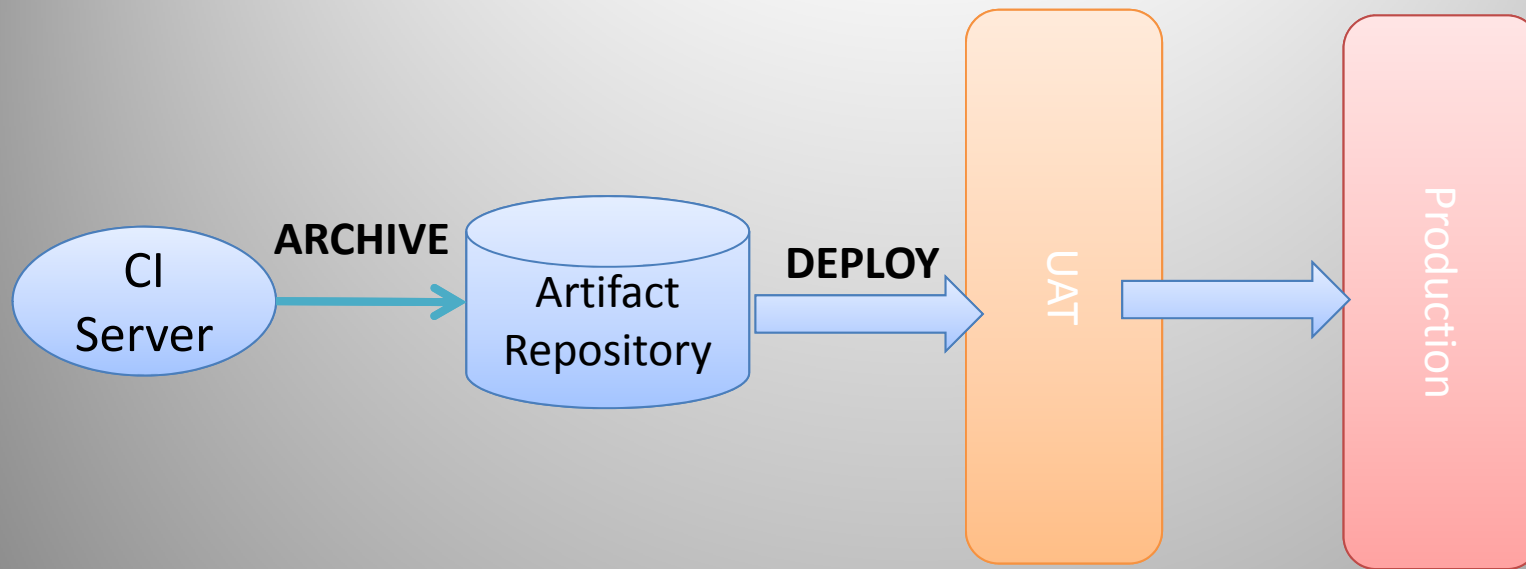
Few tests

Dev team not fully committed to CD

Pipeline V2: CI platform

- Stuck to old versions of our build tool (Maven 2). Big work to upgrade
- Try reduce module number
- Enhance Team commitment

Pipeline V2: UAT



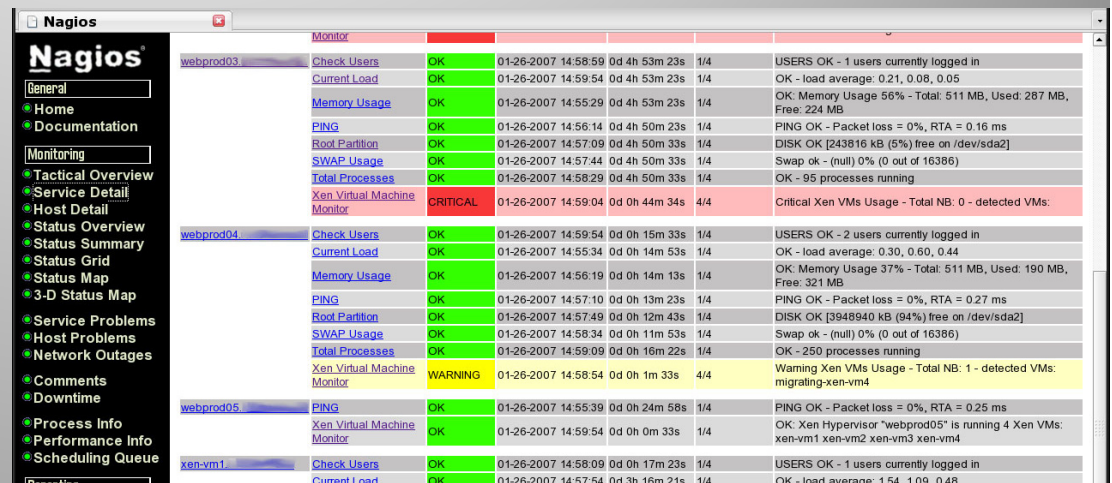
Add User Acceptance Test (UAT) platform

Pipeline V2: deployment

- Review packaging
- Use automated tools to check for the conformity of the deployment
- Currently studying tools like Chef, Puppet or CFEngine

Pipeline V2: monitoring

- Already monitoring there but no systematic use
- Must be tuned to raise relevant alarms



The screenshot shows the Nagios web interface. On the left is a navigation menu with categories like General, Home, Documentation, Monitoring, Tactical Overview, Service Detail, Host Detail, Status Overview, Status Summary, Status Grid, Status Map, 3-D Status Map, Service Problems, Host Problems, Network Outages, Comments, Downtime, Process Info, Performance Info, and Scheduling Queue. The main area displays a table of monitored services. The table has columns for host name, service name, status, last check time, next check time, check interval, and the output of the check command.

Host	Service	Status	Last Check	Next Check	Check Int.	Output
webprod03	Check Users	OK	01-26-2007 14:58:59	0d 4h 53m 23s	1/4	USERS OK - 1 users currently logged in
	Current Load	OK	01-26-2007 14:59:54	0d 4h 53m 23s	1/4	OK - load average: 0.21, 0.08, 0.05
	Memory Usage	OK	01-26-2007 14:55:29	0d 4h 53m 23s	1/4	OK Memory Usage 56% - Total: 511 MB, Used: 287 MB, Free: 224 MB
	PING	OK	01-26-2007 14:56:14	0d 4h 50m 23s	1/4	PING OK - Packet loss = 0%, RTA = 0.16 ms
	Root Partition	OK	01-26-2007 14:57:09	0d 4h 50m 33s	1/4	DISK OK [243816 kB (5%) free on /dev/sda2]
	SWAP Usage	OK	01-26-2007 14:57:44	0d 4h 50m 33s	1/4	Swap ok - (null) 0% (0 out of 16386)
	Total Processes	OK	01-26-2007 14:58:29	0d 4h 50m 33s	1/4	OK - 95 processes running
webprod04	Xen Virtual Machine Monitor	CRITICAL	01-26-2007 14:59:04	0d 0h 44m 34s	4/4	Critical Xen VMs Usage - Total NB: 0 - detected VMs:
	Check Users	OK	01-26-2007 14:59:54	0d 0h 15m 33s	1/4	USERS OK - 2 users currently logged in
	Current Load	OK	01-26-2007 14:55:34	0d 0h 14m 53s	1/4	OK - load average: 0.30, 0.60, 0.44
	Memory Usage	OK	01-26-2007 14:56:19	0d 0h 14m 13s	1/4	OK Memory Usage 37% - Total: 511 MB, Used: 190 MB, Free: 321 MB
	PING	OK	01-26-2007 14:57:10	0d 0h 13m 23s	1/4	PING OK - Packet loss = 0%, RTA = 0.27 ms
	Root Partition	OK	01-26-2007 14:57:49	0d 0h 12m 43s	1/4	DISK OK [3948940 kB (94%) free on /dev/sda2]
	SWAP Usage	OK	01-26-2007 14:58:34	0d 0h 11m 53s	1/4	Swap ok - (null) 0% (0 out of 16386)
webprod05	Total Processes	OK	01-26-2007 14:59:09	0d 0h 16m 22s	1/4	OK - 250 processes running
	Xen Virtual Machine Monitor	WARNING	01-26-2007 14:58:54	0d 0h 1m 33s	4/4	Warning Xen VMs Usage - Total NB: 1 - detected VMs: migrating-xen-vm4
	PING	OK	01-26-2007 14:55:39	0d 0h 24m 58s	1/4	PING OK - Packet loss = 0%, RTA = 0.25 ms
xen-vm1	Xen Virtual Machine Monitor	OK	01-26-2007 14:59:54	0d 0h 0m 33s	1/4	OK Xen Hypervisor "webprod05" is running 4 Xen VMs: xen-vm1 xen-vm2 xen-vm3 xen-vm4
	Check Users	OK	01-26-2007 14:58:09	0d 0h 17m 23s	1/4	USERS OK - 1 users currently logged in
	Current Load	OK	01-26-2007 14:57:54	0d 3h 16m 21s	1/4	OK - load average: 1.54 1.09 0.48

DevOps

Enhance collab between Dev & Ops:

- Operationals closer to business requirements
- Developers closer to operation



Pipeline V2: Change management

- Define a clear changing workflow
- Deploy more frequently (every week?)
- Will help Reducing operation incident



Conclusion

- Achieve QoS by implementing CD
- Strong conviction required
- people first, tools after
- small iterative steps