

Intracom Telecom

Java SE / EE Workshop

Introduction

Today:

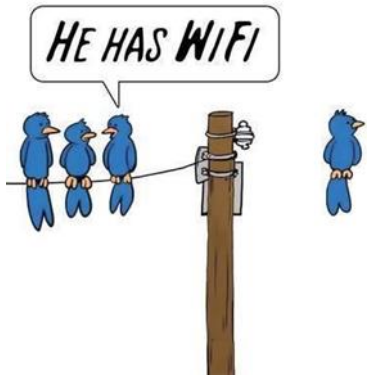
- ☐ Introduction (15')
- ☐ Software Development Methodologies (30')
- ☐ **Break** (15')
- ☐ Technical Challenges (15')
- ☐ Hands-on (60')

Tomorrow:

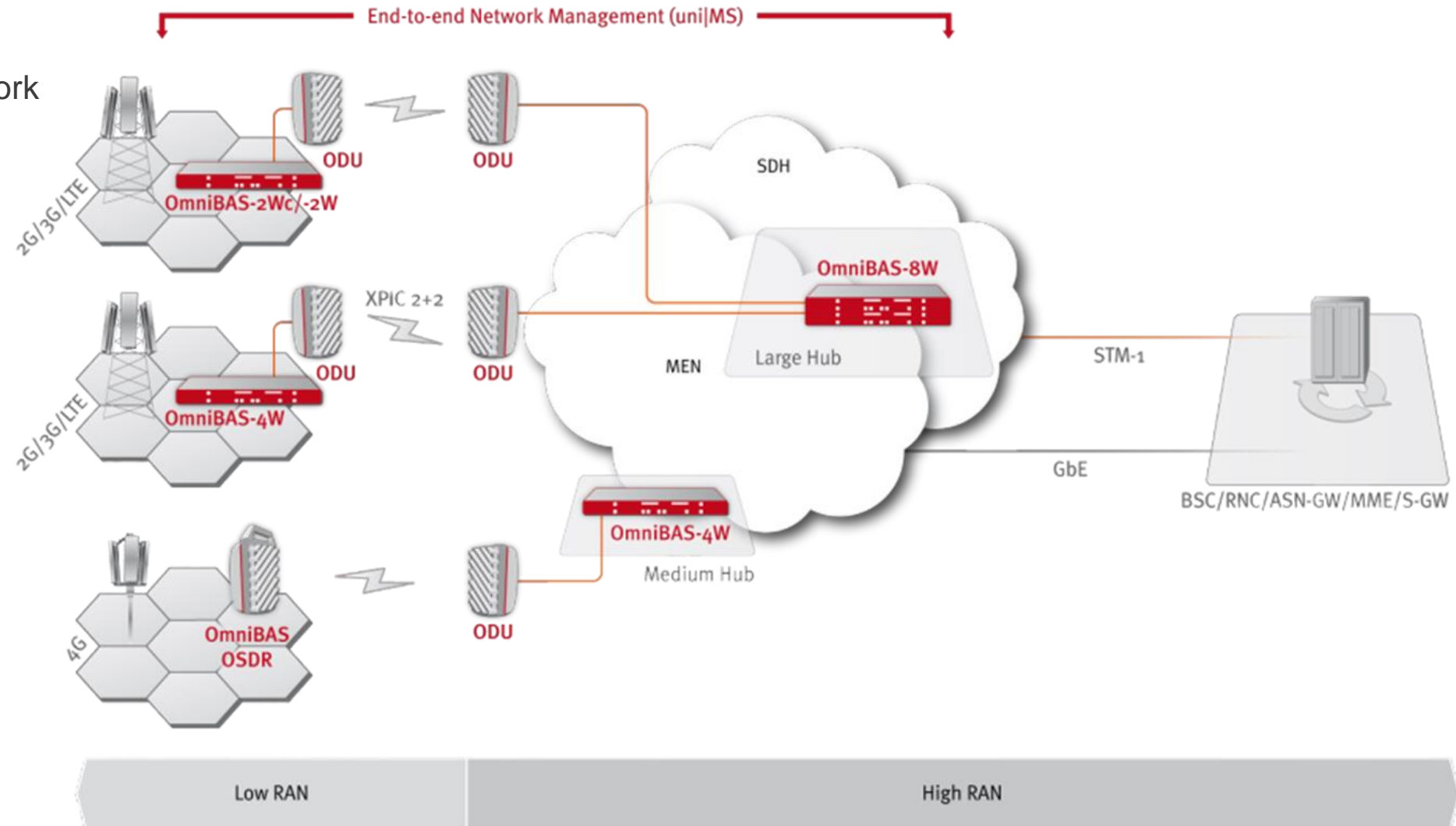
- ☐ Hands-on

Software for in-house developed wireless systems

- Device software (embedded)
- Network Management software



- Connects RAN to Core Network
- Cost effective
- Easy and quick installation
- No licencing
- Affected by environment conditions



Local Management



telnet (CLI)

ssh (CLI)

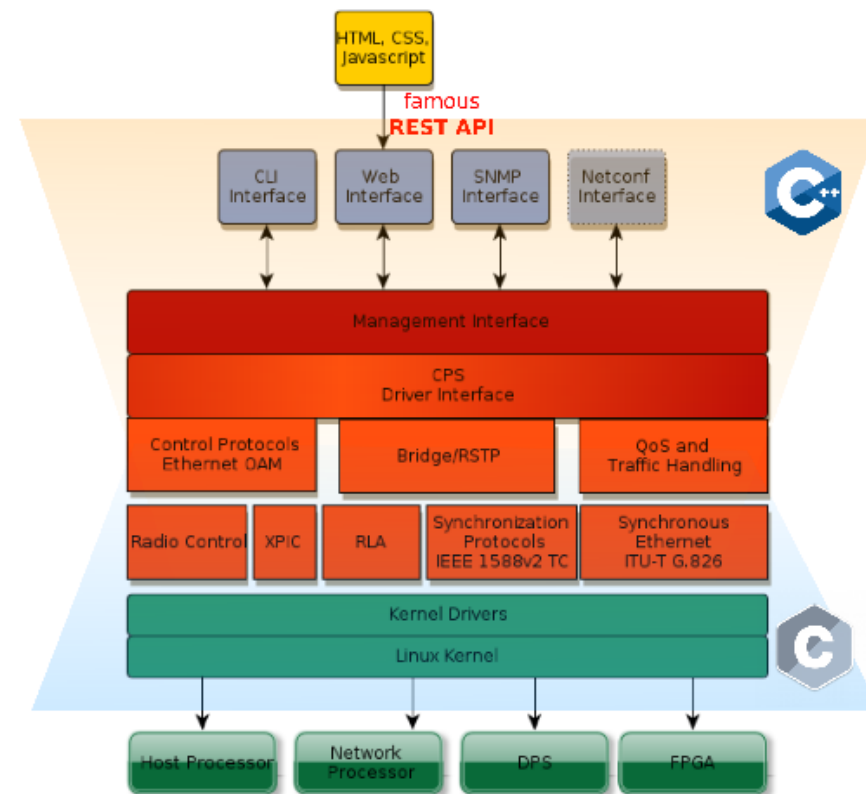
http (WEB UI)

ftp



SNMP (MIBs, ASN.1)

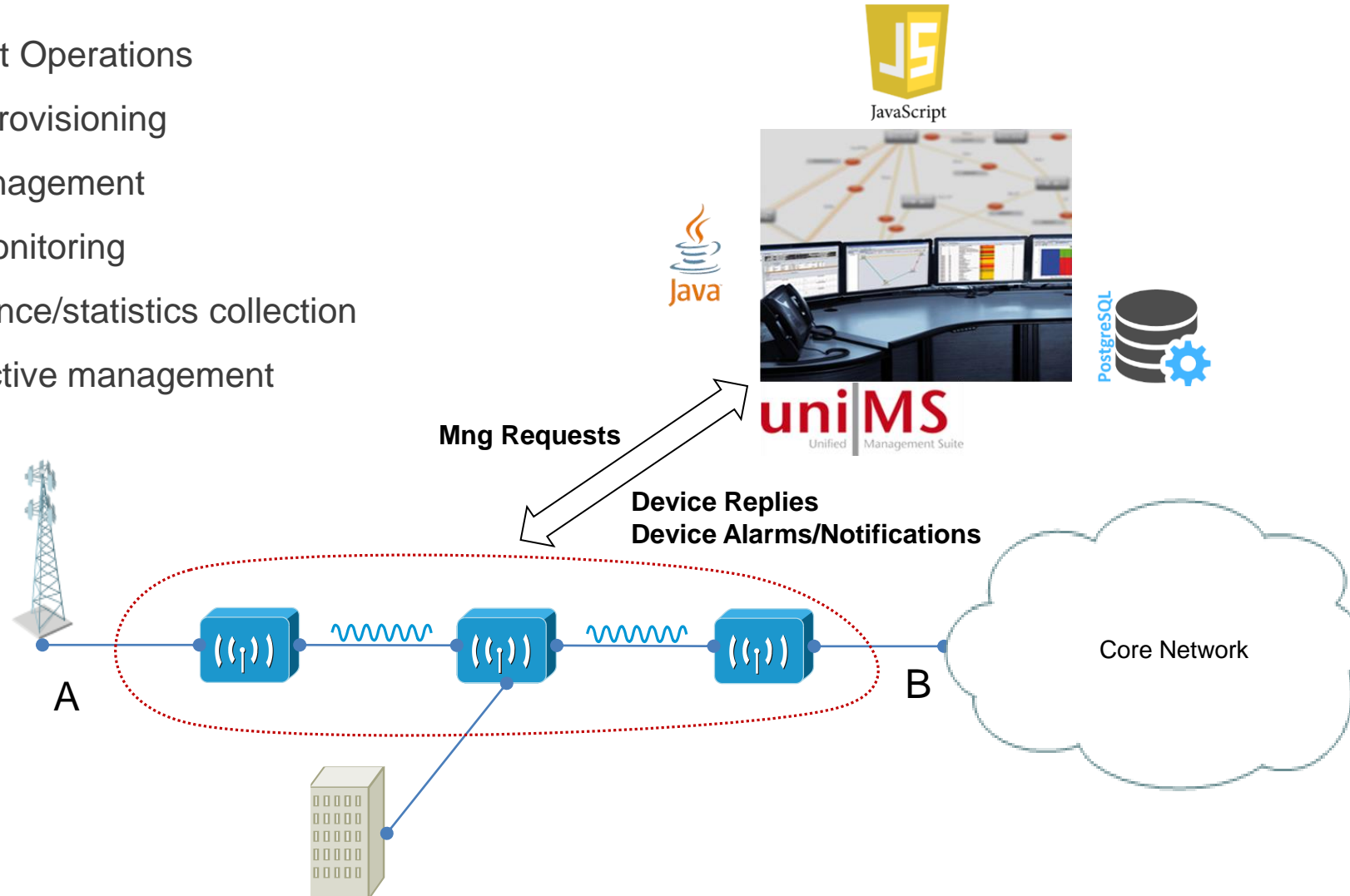
NETCONF (YANG, XML)



Basic Management Operations

- Service provisioning
- Fault Management
- Status monitoring
- Performance/statistics collection

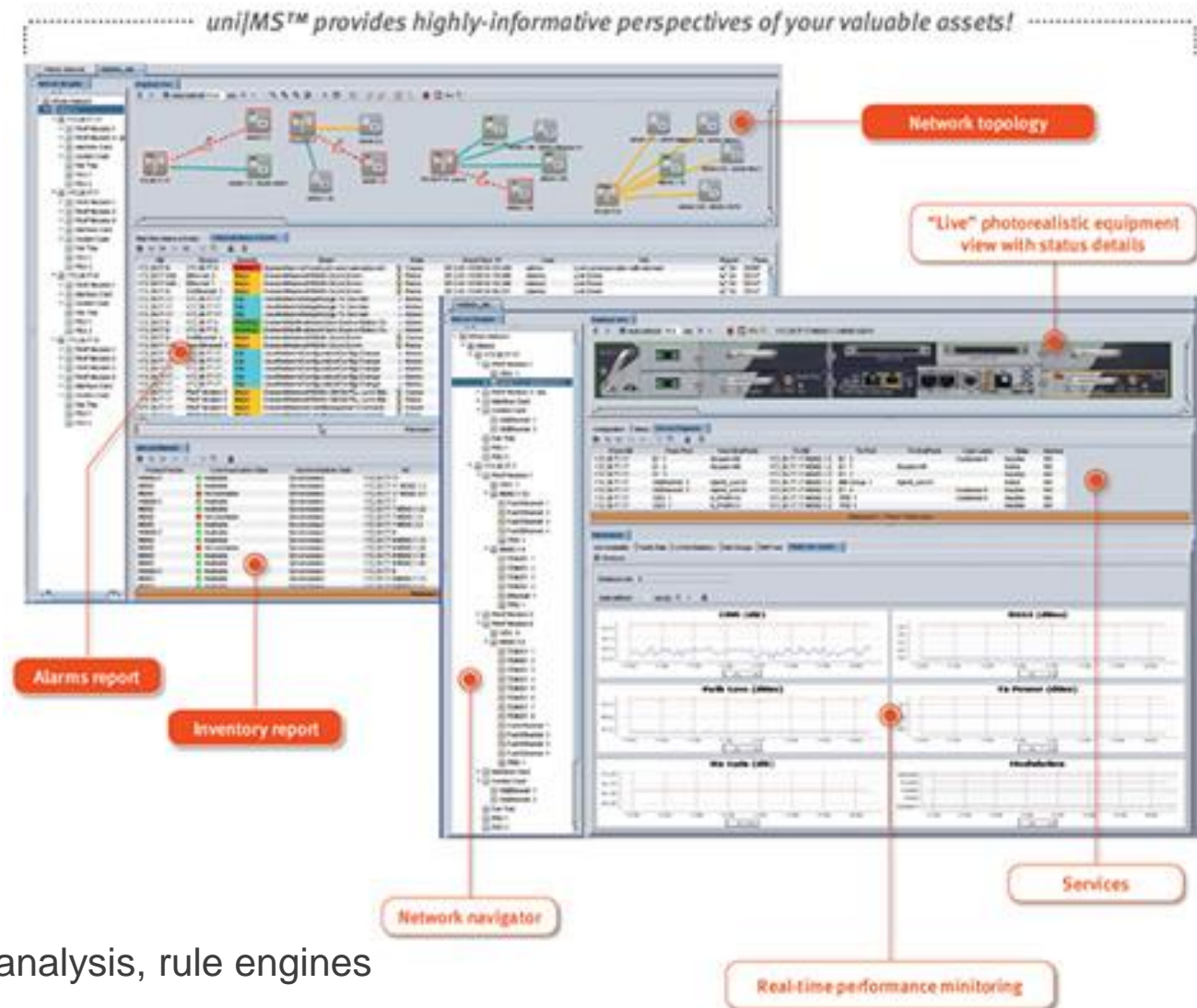
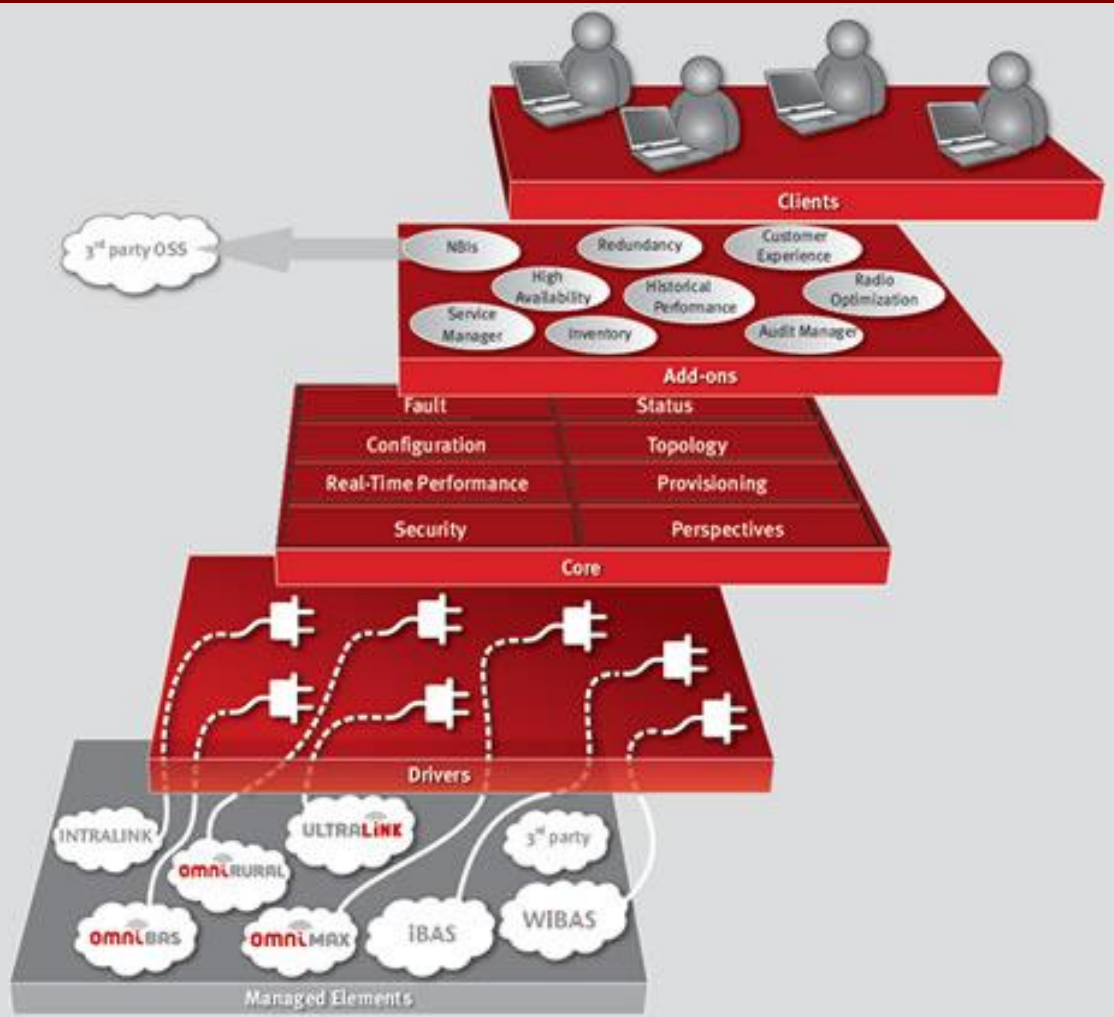
Reactive vs. Proactive management



Who uses Network Management SW?

- a. Equipment manufacturer (e.g. Intracom Telecom) installation personnel
- b. Telecom Operator (e.g. Cosmote/Vodafone/Wind etc.) personnel
- c. End-user customer
- d. Government authorities

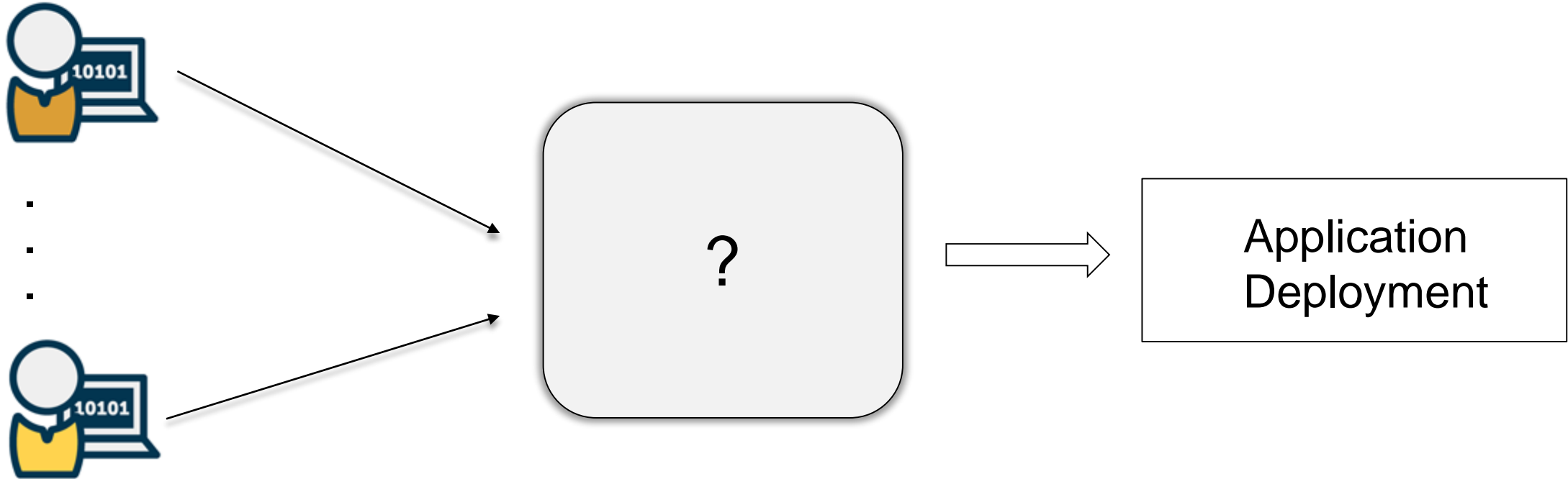
NMS functions



- Alarm correlation, root cause analysis, rule engines
- Network intelligence, Self-Organized-Networks (SON)

- New models, paradigm shifts in networking (SDN, NFV, 5G, IoT)
- Traditional distributed protocols model → centralized intelligence (move control plane)
- Influences from advances in Data Center / Cloud technologies
- Use of Analytics, Big Data
- AI, Machine Learning → intelligent traffic engineering
communication with portals (news, weather etc.)
e.g. wireless systems utilize weather conditions forecasting → reroute traffic
or events with crowd → adapt bandwidth to conditions at the time of event

Software Engineering vs. Programming



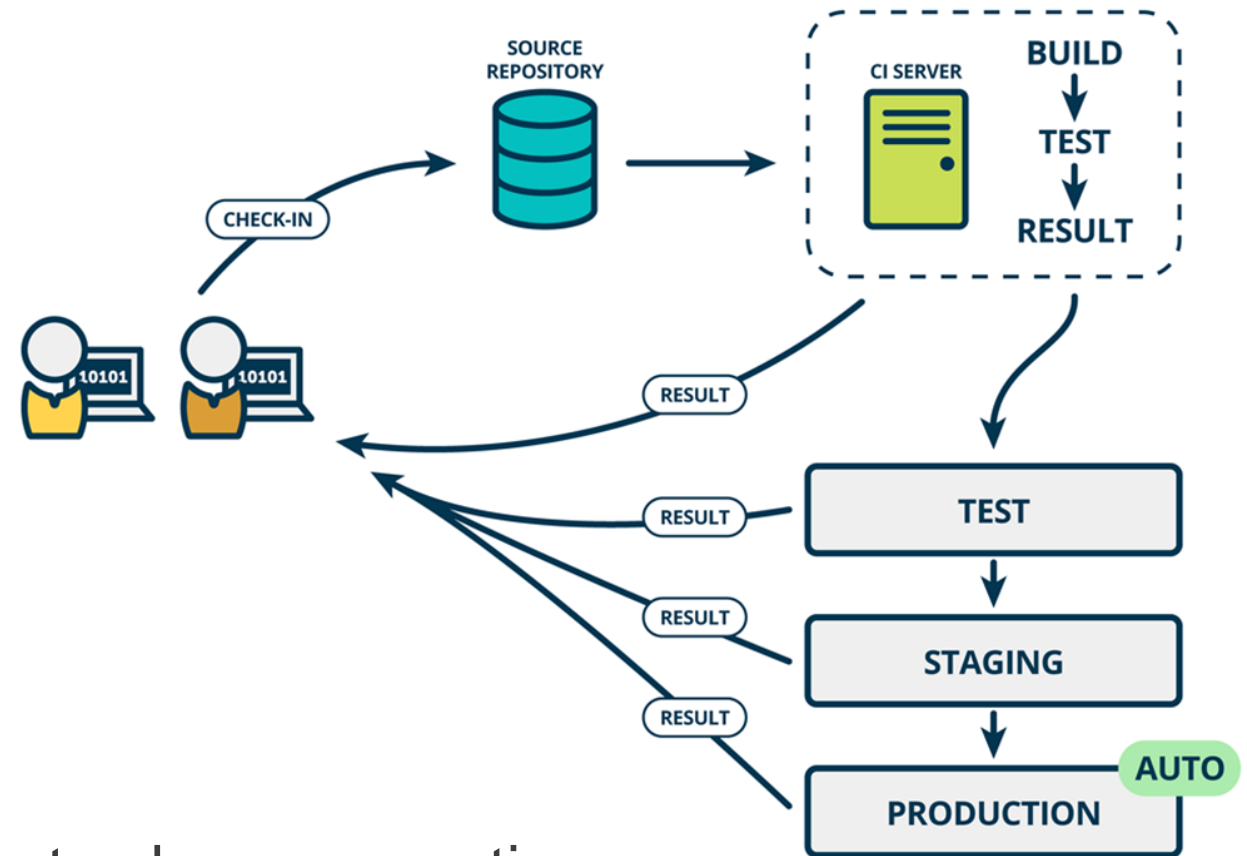
“Engineering is programming
integrated over time.”

Titus Winters

Software Engineering is Resilience to Time

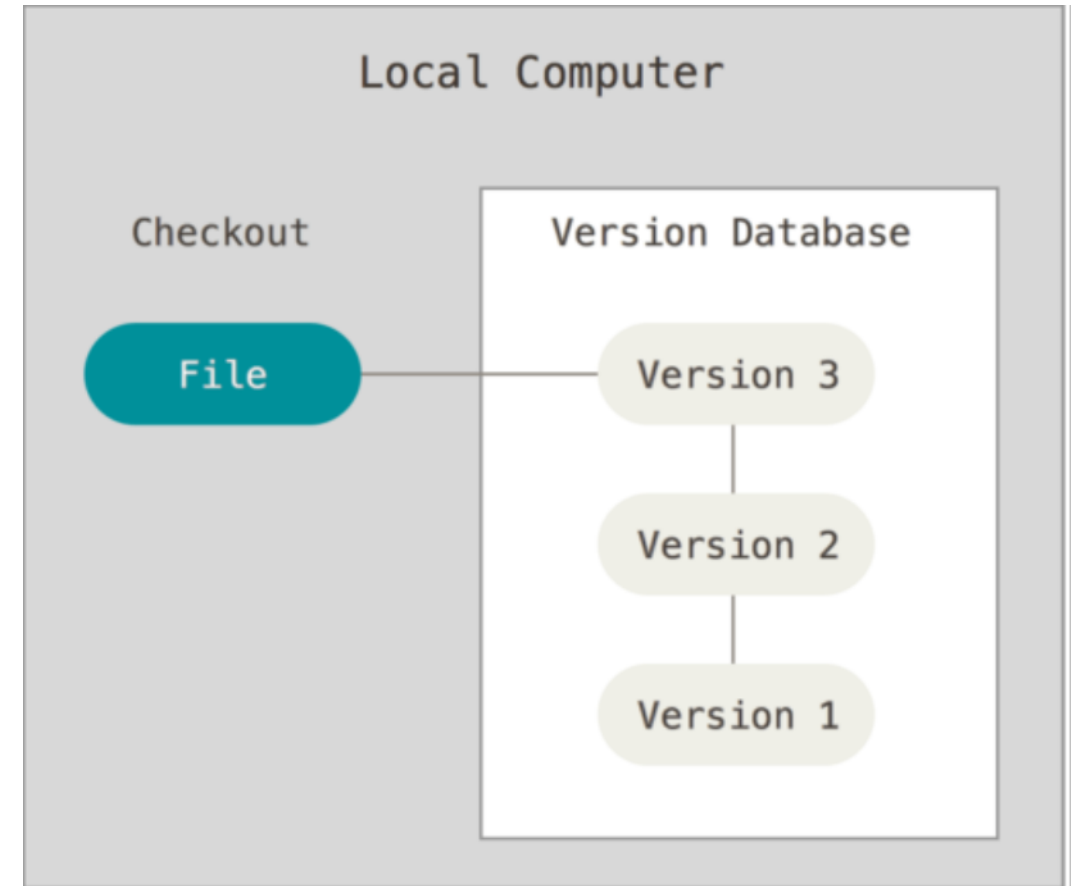
- Version Control Systems
- Continuous Integration
- Unit tests
- Refactoring tools
- Design Patterns
- Dependency management
- Issue tracking

Software engineering is about resilience to change over time.



What is version control?

- system that records changes to a file or set of files over time so that you can recall specific versions later
- can be centralized or distributed
- changes are usually identified by a number or letter code, termed the “revision number”, “revision level”, or simply “revision”
- benefits:
 - backup and restore
 - track changes
 - collaborate with team

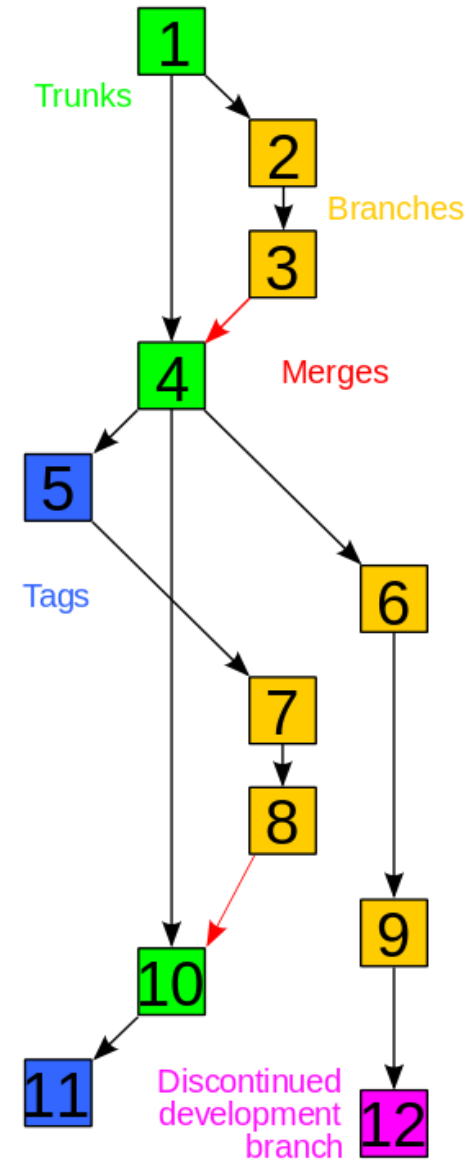


Main Concepts

- Repository
- Trunk or Mainline
- Branch
- Merge
- Tag

Main Actions

- Clone
- Add
- Commit - Check in
- Check out
- Update/Sync
- Revert
- Resolve Conflict



- fast, flexible, but challenging *distributed* version control system
- stream of snapshots (*commits* with SHA-1 hash ids)
- working directory, staging area, repository

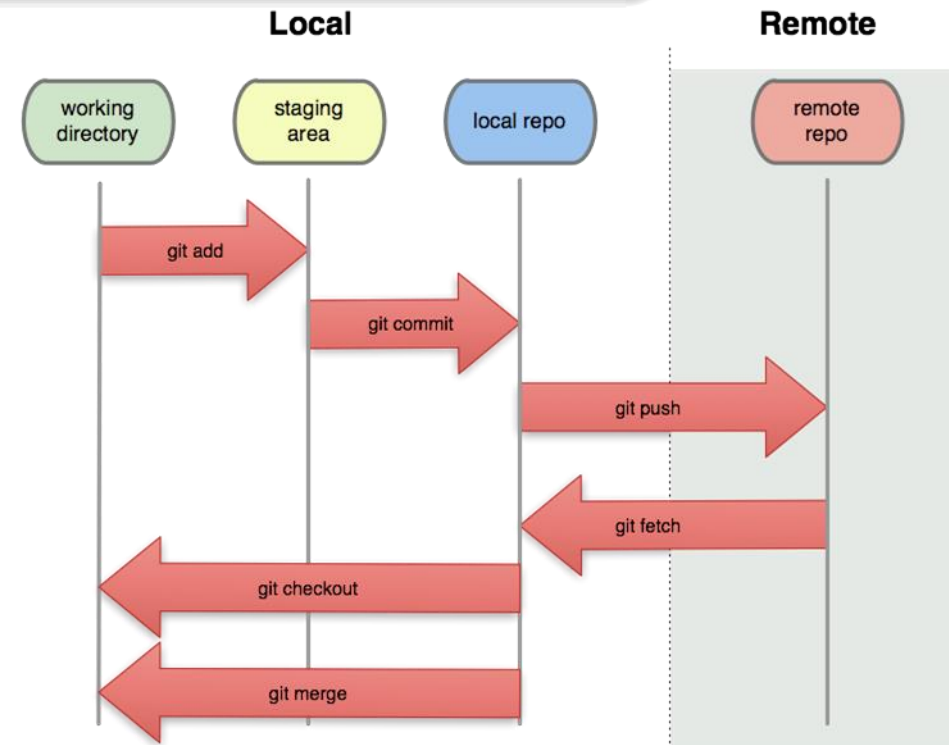
```
# add to staging area
$ git add foo.txt

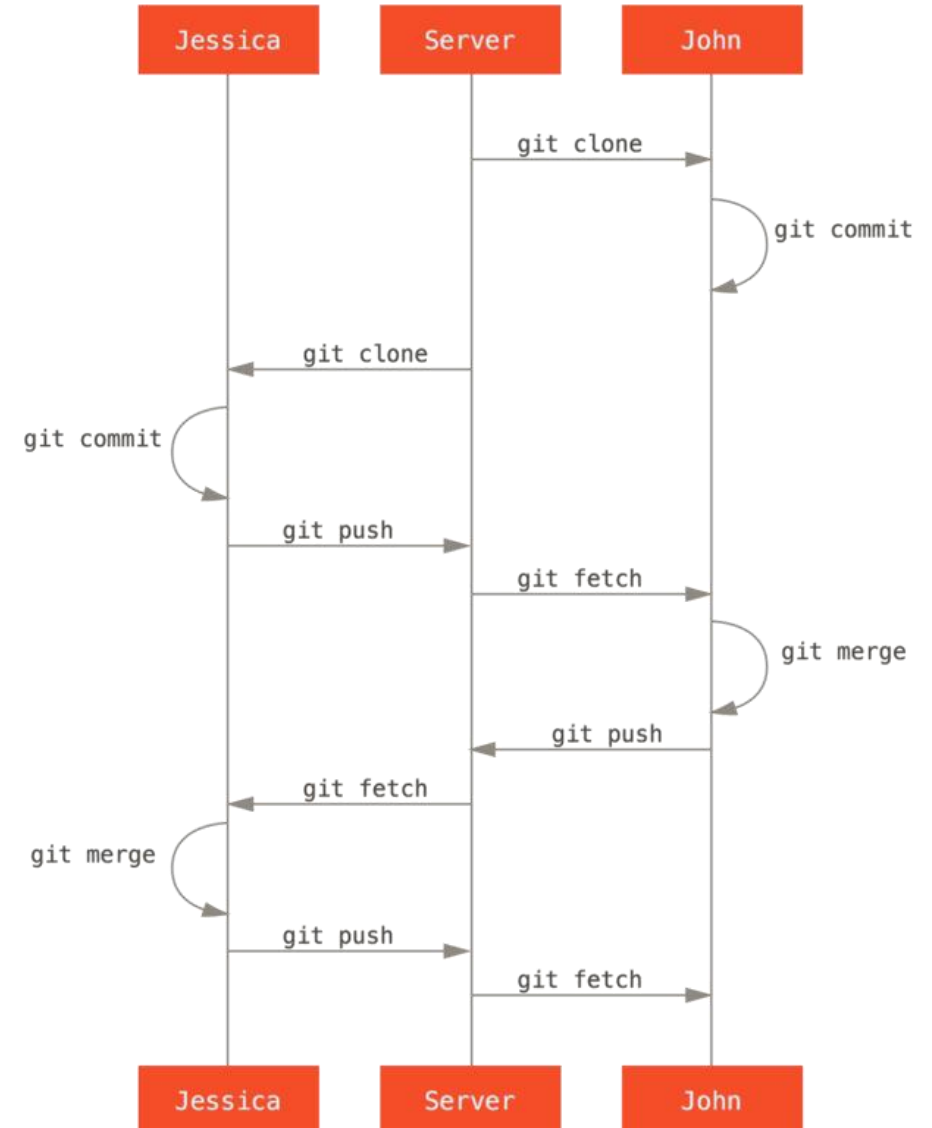
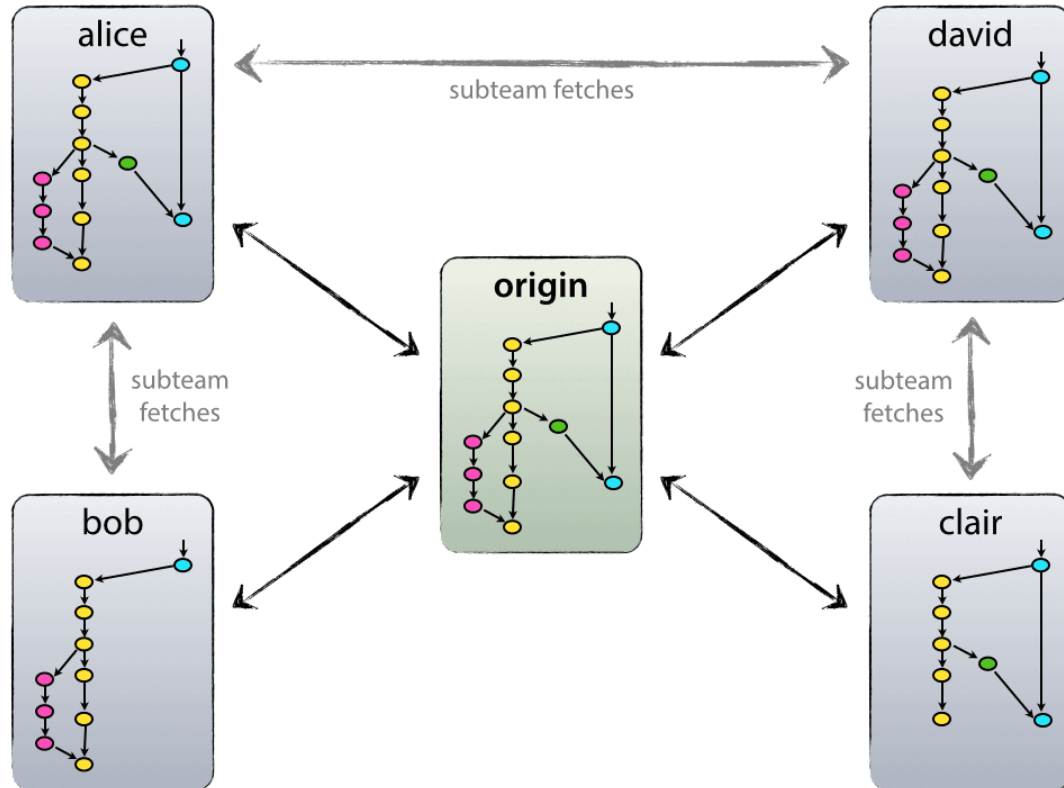
# commit staged files to repository
$ git commit -m "message"

# undo local (unstaged) changes
$ git checkout foo.txt

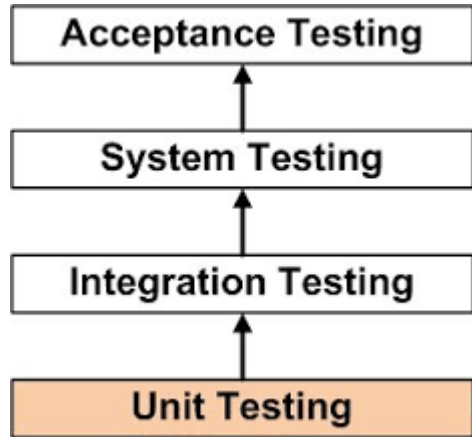
# unstage staged changes
$ git reset HEAD foo.txt

# show commit logs (history)
$ git log foo.txt
```

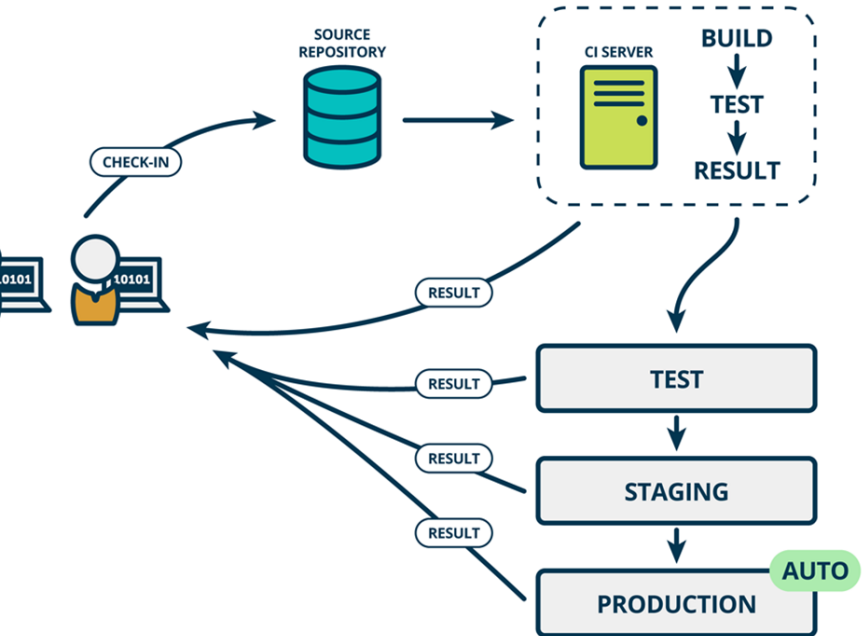




Continuous Integration

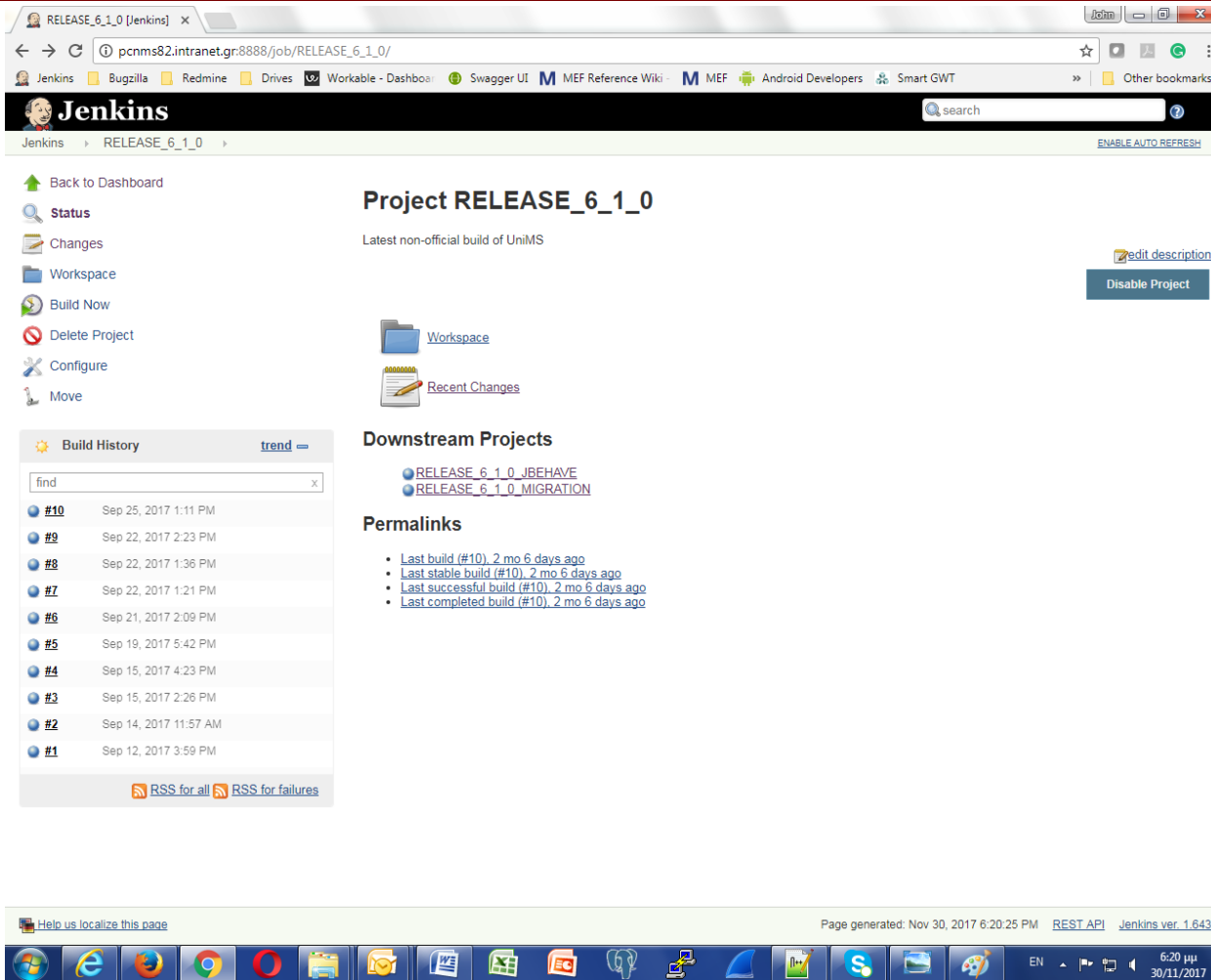


- CI is a practice not a tool
- Combines integration-build-testing in an automated way
- Visibility of code status for all
- SW is in a working state all the time
- Developers begin fresh work from a known good starting point
- Easy to find and fix bugs
- Enables refactoring



Google





RELEASE_6_1_0 [Jenkins] x

pcnms82.intranet.gr:8888/job/RELEASE_6_1_0/

Jenkins Bugzilla Redmine Drives Workable - Dashboards Swagger UI MEF Reference Wiki MEF Android Developers Smart GWT

Jenkins

Jenkins RELEASE_6_1_0

Back to Dashboard

Status

Changes

Workspace

Build Now

Delete Project

Configure

Move

Project RELEASE_6_1_0

Latest non-official build of UniMS

[edit description](#)

[Disable Project](#)

[Workspace](#)

[Recent Changes](#)

Build History

find

#	Time
#10	Sep 25, 2017 1:11 PM
#9	Sep 22, 2017 2:23 PM
#8	Sep 22, 2017 1:36 PM
#7	Sep 22, 2017 1:21 PM
#6	Sep 21, 2017 2:09 PM
#5	Sep 19, 2017 5:42 PM
#4	Sep 15, 2017 4:23 PM
#3	Sep 15, 2017 2:26 PM
#2	Sep 14, 2017 11:57 AM
#1	Sep 12, 2017 3:59 PM

RSS for all RSS for failures

Downstream Projects

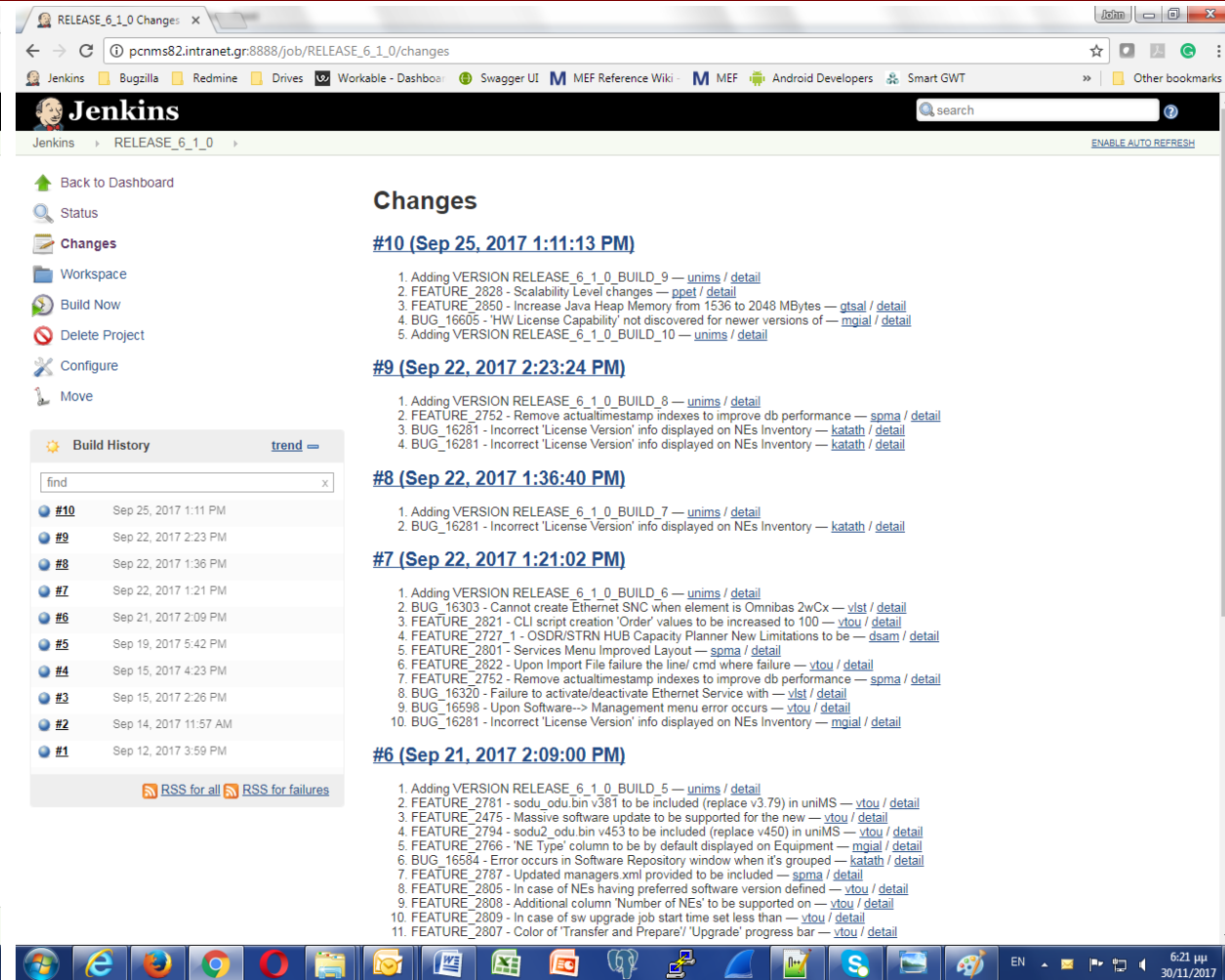
- RELEASE_6_1_0_JBEHAVE
- RELEASE_6_1_0_MIGRATION

Permalinks

- Last build (#10), 2 mo 6 days ago
- Last stable build (#10), 2 mo 6 days ago
- Last successful build (#10), 2 mo 6 days ago
- Last completed build (#10), 2 mo 6 days ago

Help us localize this page

Page generated: Nov 30, 2017 6:20:25 PM REST API Jenkins ver 1.643



RELEASE_6_1_0 Changes x

pcnms82.intranet.gr:8888/job/RELEASE_6_1_0/changes

Jenkins Bugzilla Redmine Drives Workable - Dashboards Swagger UI MEF Reference Wiki MEF Android Developers Smart GWT

Jenkins

Jenkins RELEASE_6_1_0

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Changes

#10 (Sep 25, 2017 1:11:13 PM)

- Adding VERSION RELEASE_6_1_0_BUILD_9 — [unims / detail](#)
- FEATURE_2828 - Scalability Level changes — [ppet / detail](#)
- FEATURE_2850 - Increase Java Heap Memory from 1536 to 2048 MBytes — [gtsal / detail](#)
- BUG_16605 - 'HW License Capability' not discovered for newer versions of — [mgial / detail](#)
- Adding VERSION RELEASE_6_1_0_BUILD_10 — [unims / detail](#)

#9 (Sep 22, 2017 2:23:24 PM)

- Adding VERSION RELEASE_6_1_0_BUILD_8 — [unims / detail](#)
- FEATURE_2752 - Remove actualtimestamp indexes to improve db performance — [spma / detail](#)
- BUG_16281 - Incorrect 'License Version' info displayed on NEs Inventory — [katath / detail](#)
- BUG_16281 - Incorrect 'License Version' info displayed on NEs Inventory — [katath / detail](#)

#8 (Sep 22, 2017 1:36:40 PM)

- Adding VERSION RELEASE_6_1_0_BUILD_7 — [unims / detail](#)
- BUG_16281 - Incorrect 'License Version' info displayed on NEs Inventory — [katath / detail](#)

#7 (Sep 22, 2017 1:21:02 PM)

- Adding VERSION RELEASE_6_1_0_BUILD_6 — [unims / detail](#)
- BUG_16303 - Cannot create Ethernet SNC when element is Omnibus 2wCx — [vltst / detail](#)
- FEATURE_2821 - CLI script creation 'Order' values to be increased to 100 — [vtou / detail](#)
- FEATURE_2727_1 - OSD/STRN HUB Capacity Planner New Limitations to be — [dsam / detail](#)
- FEATURE_2801 - Services Menu Improved Layout — [spma / detail](#)
- FEATURE_2822 - Upon Import File failure the line/ cmd where failure — [vtou / detail](#)
- FEATURE_2752 - Remove actualtimestamp indexes to improve db performance — [spma / detail](#)
- BUG_16320 - Failure to activate/deactivate Ethernet Service with — [vltst / detail](#)
- BUG_16598 - Upon Software-> Management menu error occurs — [vtou / detail](#)
- BUG_16281 - Incorrect 'License Version' info displayed on NEs Inventory — [mgial / detail](#)

#6 (Sep 21, 2017 2:09:00 PM)

- Adding VERSION RELEASE_6_1_0_BUILD_5 — [unims / detail](#)
- FEATURE_2781 - sodu_odu bin v381 to be included (replace v3.79) in uniMS — [vtou / detail](#)
- FEATURE_2475 - Massive software update to be supported for the new — [vtou / detail](#)
- FEATURE_2794 - sodu2_odu bin v453 to be included (replace v450) in uniMS — [vtou / detail](#)
- FEATURE_2766 - 'NE Type' column to be by default displayed on Equipment — [mgial / detail](#)
- BUG_16584 - Error occurs in Software Repository window when it's grouped — [katath / detail](#)
- FEATURE_2787 - Updated managers.xml provided to be included — [spma / detail](#)
- FEATURE_2805 - In case of NEs having preferred software version defined — [vtou / detail](#)
- FEATURE_2808 - Additional column 'Number of NEs' to be supported on — [vtou / detail](#)
- FEATURE_2809 - In case of sw upgrade job start time set less than — [vtou / detail](#)
- FEATURE_2807 - Color of 'Transfer and Prepare' / 'Upgrade' progress bar — [vtou / detail](#)

Questions & Answers

thank you

For more information, visit
www.intracom-telecom.com



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