



Continuous Globalization

# False Positives & Managing G11n in Sync with Development

From Lingoport:

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# Agenda

- False positives background
- Static Analysis vs. Testing
- Intro to Lingoport & Products
- Continuous Globalization
- Handling False Positives Demo
  - Code scanning, filtering and false positives management
- What's learned
- Q&A, Follow-up Resources



# False Positives

- Test result which incorrectly indicates that a particular condition or attribute is present
  - Distracts from real issues
  - Can overwhelm results and usefulness
  - Source of friction when measuring a process for improvements
- #1 Objection!!!
  - Coverity
- VS. False Negative





# Why False Positives

1. Software is complex
2. When you are measuring complex conditions that in some cases might be a problem and others not, you should expect false positives results
3. The degree to which you can control and manage false positives will have a strong effect on measurement usability



# Example False Positive

[http://wiki.lingoport.com/False Positives](http://wiki.lingoport.com/False_Positives)

```
SimpleDateFormat formatter =new  
SimpleDateFormat("MM/dd/yy");  
String dateString = formatter.format(new Date());
```

Using the default Java rule sets, this code will raise i18n issues. If the dateString variable is user facing, this code is indeed an issue to be fixed (for more information, check your rule set help pages).

However, if the dateString variable is used for internal purposes, such as a in a support log file, it should not be modified and is a false positive.



# False Positives vs Issues

## Example False Positive:

Here, the string “`message`” is sent only to a log file. It won’t be user facing, and does not need to be internationalized.

```
if (!file.exists()) {  
    String message = "Cannot open resource. It's not a valid file or URL.";  
    Util.getLogger().log(Level.SEVERE, message);  
}
```

## Example Issue:

Here the string “`msg`” is first sent to a log file, then displayed to the user. It will need to be externalized for translation.

```
catch (XMLStreamException e) {  
    String msg = "Error retrieving servers capabilities " + serverURI;  
    Util.getLogger().log(Level.SEVERE, msg, e);  
    controller.showErrorDialog(e, msg);  
}
```

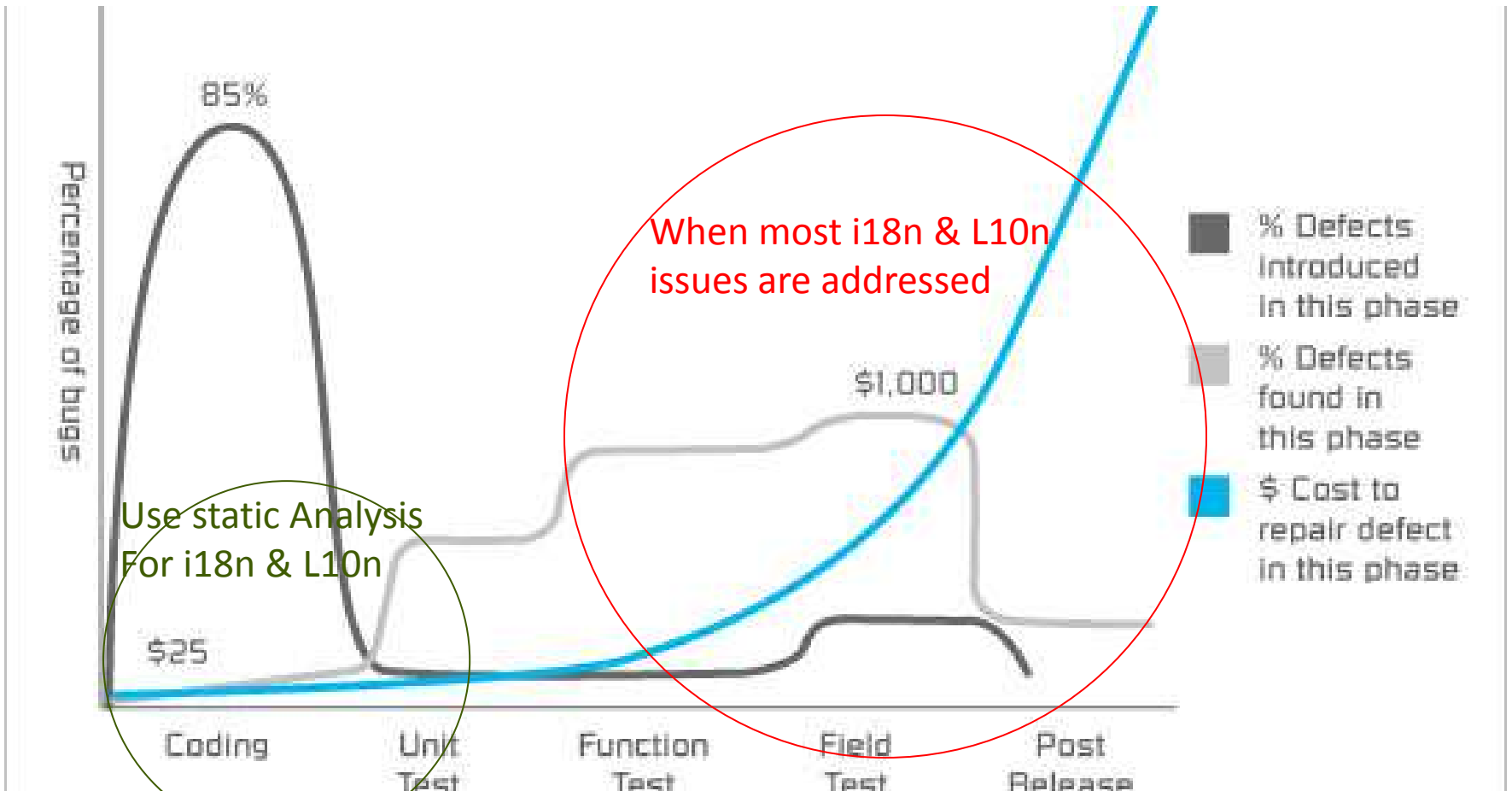


# Static Analysis

- Measuring conditions in source code, rather than having to actively test
- Code scanning, looking for specific conditions:
  - Bugs
  - Security
  - I18n
  - L10n Changes to the resource files in the code repository(s)



# Defect costs per stage



*Traditional approach to SW Development in a well defined process*





# Static Analysis vs. Testing

- Do both!
- Testing requires that you hit all conditions to be measured
- Testing is by its nature an iterative loop
  - Code, test, fix, verify
  - Can take more time, more to manage, more manual processes
  - More human error or omission

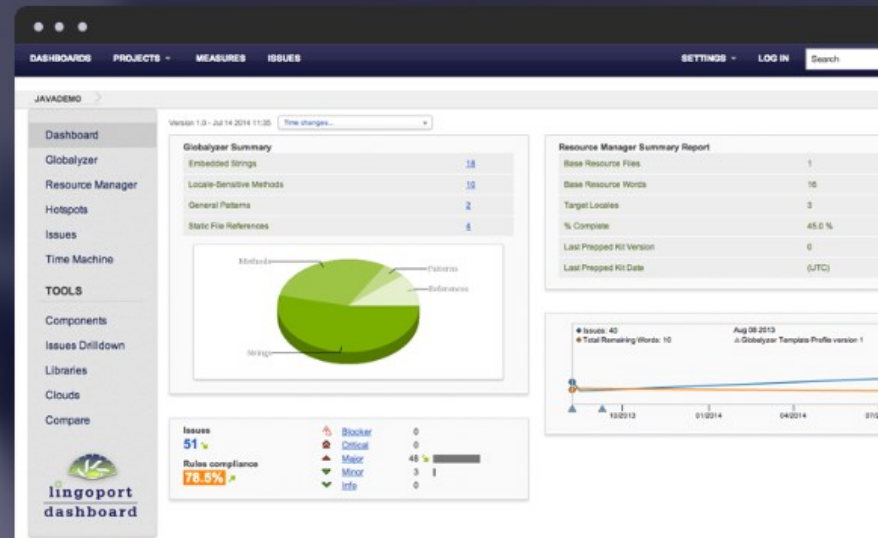


# Create Software that Works Elegantly in Any Language and Cultural Format.

[View Our Products](#)

or

[View Our Services](#)





# Lingoport Suite

Systems, automation & measurement to facilitate ongoing software internationalization and localization.



lingoport  
**globalyzer**



lingoport  
**dashboard**



lingoport  
**resource  
manager**



# Lingoport Dashboard

- G11n visibility over multiple products and projects
- Drill down & Planning

DASHBOARDS PROJECTS MEASURES ISSUES SETTINGS ADAM ASNES Search

MOBILE-ANDROID

Version L10n - Dec 01 2015 18:15 Time changes... Manage dashboards

### Globalyzer Summary

Embedded Strings	412
Locale-Sensitive Methods	350
General Patterns	30
Static File References	8

Issues: 1,014  
Rules compliance: 97.3%

Blocker	0
Critical	0
Major	944
Minor	70
Info	0

### Resource Manager Summary Report

Base Resource Files	4
Base Resource Words	3,916
Target Locales	9
% Complete	97.0 %
Last Prepped Kit Version	75
Last Prepped Kit Date	2015-11-18 23:36:16 (UTC)

Issues: 1,014  
Total Remaining Words: 711  
18:15  
Δ L10n

lingoport dashboard



# Globalyzer

- **Server:** Customize and store Rules (no source access)
- **Workbench:** Big i18n jobs, Configure rules, i18n focus
- **Lite:** i18n check from developer IDE or automated check-in
- **Command Line:** Automate i18n measurement from the repo

The screenshot shows the Globalyzer Workbench IDE. The main window displays a Java code editor with the following code:

```
private void createDatePanel() {  
    datePanel_ = new JPanel(new GridBagLayout());  
    TitledBorder tb = new TitledBorder(new LineBorder(Color.darkGray),  
        "Today's Date");  
    datePanel_.setBorder(tb);  
    datePanel_.setToolTipText("Displays today's date and time.");  
  
    JLabel dateLabel = new JLabel("Today's Date: ");  
    JLabel timeLabel = new JLabel("Time: ");  
  
    //-- Lay out the components.  
    GridBagConstraints constraints = new GridBagConstraints();  
    constraints.insets = new Insets(10, 10,  
        10, 10);  
  
    constraints.anchor = GridBagConstraints.NORTHWEST;  
    constraints.fill = GridBagConstraints.HORIZONTAL;  
    createDatePanel_ = new JPanel();  
}
```

The bottom panel shows the Scan Results table:

Sta	File	Line	Issue	Code Line	Reason
3	src/com/lingoport/demo/java/ExampleMain...	22	"en"	Locale locale = new Loc...	String
5	src/com/lingoport/demo/java/ExampleMain...	22	"US"	Locale locale = new Loc...	String
2	src/com/lingoport/demo/java/ExampleMain...	53	"Example Address B...	String strTitle = "Exam...	String
1	src/com/lingoport/demo/java/ExamplePane...	85	"Next"	nextButton_ = new JBut...	JButton
1	src/com/lingoport/demo/java/ExamplePane...	95	"Add"	addButton_ = new JBut...	JButton
1	src/com/lingoport/demo/java/ExamplePane...	104	"Exit"	exitButton_ = new JBut...	JButton
1	src/com/lingoport/demo/java/ExamplePane...	132	"Today's Date"	...", String	String
1	src/com/lingoport/demo/java/ExamplePane...	134	"Displays today's dat...	datePanel_.setToolTipT...	setToolTipText
1	src/com/lingoport/demo/java/ExamplePane...	136	"Today's Date: "	JLabel dateLabel = new...	JLabel
1	src/com/lingoport/demo/java/ExamplePane...	137	"Time: "	JLabel timeLabel = new...	JLabel
1	src/com/lingoport/demo/java/ExamplePane...	186	"Address Info"	...", String	String
1	src/com/lingoport/demo/java/ExamplePane...	188	"Displays the addres...	infoPanel_.setToolTio...	setToolTipText



The screenshot shows the Globalyzer Demo - Manager web interface. The main heading is "Customize Rule Set". Below it, the "Rule Set Name" is "Michael", "Language" is "java", and "Extends" is "None".

You can customize your Globalyzer Rule Set by selecting the Configure link below for the scanning category you wish to alter. You can also rerun the scan at the bottom of the page. For more help with Rule Sets, click here.

Source File Extensions

- Detection Rules: [Configure Source File Extensions](#)
- Filtering Rules: [Configure File Extension Filters](#)

Embedded String Scan Rules



# Resource Manager

- See what's new in resource bundles
- Automate Prep Kits
- Automate file validation
- Automate sending files for Localization
  - Via TMS or L10n Vendor Portal
- Track it
- Validate it when it comes back
- Automatically insert it back in the repo if it passes
- Email notifications as well as dashboard instrumentation
- Automated Pseudo Localization



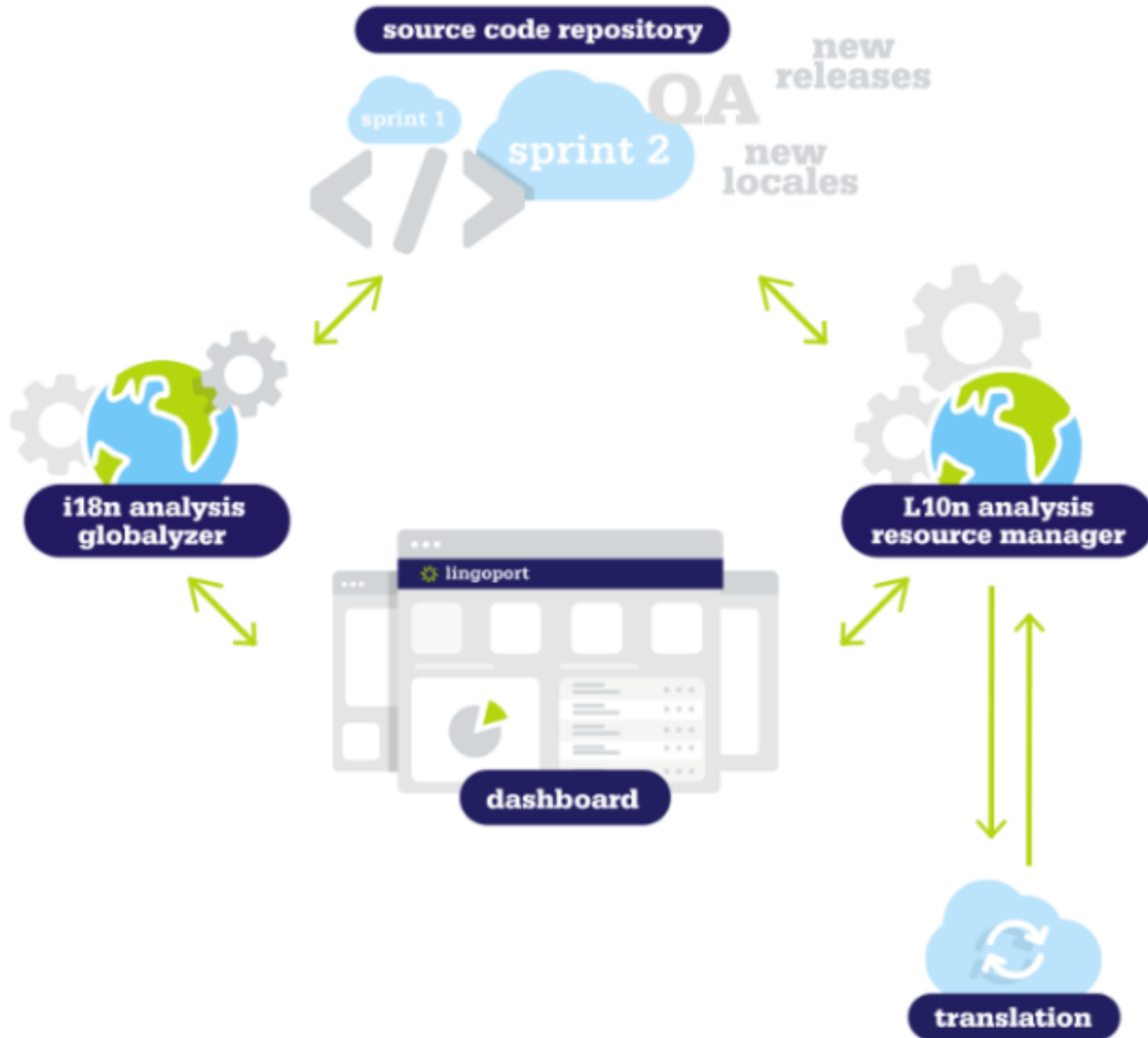
# Continuous Globalization



i18n & L10n in Every Sprint and Release



# Continuous G11n





# Continuous G11n in the Enterprise



- Automation
- Visibility
- Metrics





# Minimizing False Positives

## Globalyzer

- Scope (test directory, external library files?)
- Filtering
  - Strings
  - Locale-sensitive methods, functions, classes
  - Programming Patterns
  - Static Files
- Ignores
  - Commenting
  - In the dashboard



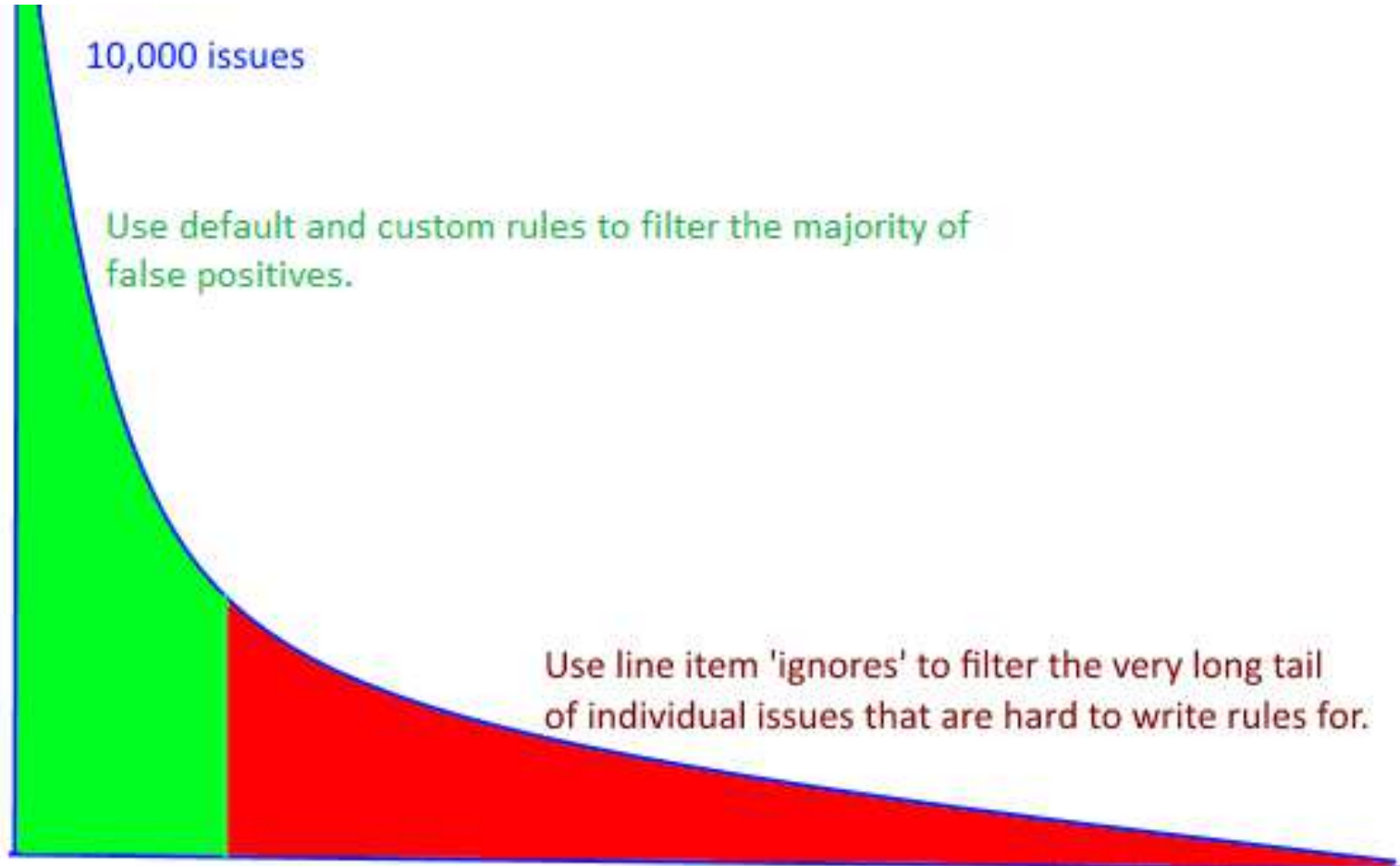
# False Positive Filtering

...

Demo!



# Rules vs Line Ignores





# Lessons for the Enterprise

- Your development teams are moving fast
- Make i18n & L10n a measured & visible part of every sprint
- Tune your processes to gain valuable measurements and insight, while cutting out false positives



# Questions & Answers:

Co

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Lingoport Suite

Extensive Services

Training – [training.lingoport.com](http://training.lingoport.com)





# Question #1

- What programming languages have the most issues?



# Question #2

- How much will I have to filter?





# Question #3

- Do I have to have a person dedicated to rules? How do I manage upkeep?