



Performance Testing: Don't Overlook the Easy Stuff

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Don't Overlook the Easy Stuff



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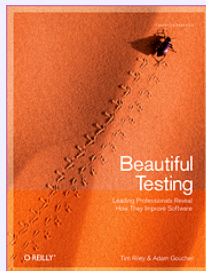
Executive Director, Association for Software Testing

www.associationforsoftwaretesting.org

Co-Founder, Workshop On Performance and Reliability

www.performance-workshop.org

Beautiful Testing



oreilly.com/catalog/9780596159825

Performance Testing Guidance for Web Applications



www.codeplex.com/PerfTestingGuide
www.amazon.com/gp/product/0735625700



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Performance Testing Software Systems

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Credits

Some of the material in this presentation was inspired by *High Performance Web Sites: Essential Knowledge for Front-End Engineers*, by Steve Souders, O'Reilly, 2007.

Some of this material was developed for, or inspired by, *Performance Testing Guidance for Web Applications*, a Microsoft patterns & practices book by J.D. Meier, Scott Barber, Carlos Farre, Prashant Bansode, and Dennis Rea.

Many ideas in this presentation were inspired or enhanced by colleagues including Alberto Savoia, Roland Stens, Richard Leeke, Mike Kelly, Nate White, Rob Sabourin, Chris Loosley, Ross Collard, Jon Bach, James Bach, Jerry Weinberg, Cem Kaner, Dawn Haynes, Karen Johnson, and the entire WOPR community.

Most of the concepts in this presentation are derived from publications, presentations, and research written and/or conducted by Scott Barber.

Many ideas were improved by students who took previous versions of this course, back to 2001.





*“There is no such thing as a
‘junior performance tester’...*

*but there are people who are new
to performance testing.”*

--Scott Barber





Goal of this Course

To provide you with a variety of *fast, easy, low cost* techniques to test performance and raise the ROI of your performance testing projects by focusing on the most frequently overlooked aspects of system performance.





What is Performance Testing (Part 1)

Performance Testing: An empirical, technical investigation conducted to provide stakeholders with information about the quality of the product or service under test with regard to *speed*, *scalability* and/or *stability* characteristics.

Performance Investigation: A deliberate data-collection and data-interpretation activity typically focused on data related to *speed*, *scalability*, and/or *stability* of the product under test. The collected data are primarily used to assess hypotheses about the root cause of one or more observed performance issues.

Performance Validation: A deliberate activity that compares *speed*, *scalability* and/or *stability* characteristics of the product under test to the expectations of representative users of the product.





What is Performance Testing (Part 2)

In Other Words:

I help and/or teach individuals and organizations to *optimize software systems* by balancing:

- Cost
- Time to market
- Capacity

while remaining focused on the *quality of service to system users*.





What is Performance Testing (Part 2)

*“Let’s face the truth, performance testing
IS rocket science.”*

--Dawn Haynes

*... but even rocket science involves
SOME easy stuff.*

--Addendum added by: Scott Barber





Easy Thing #1

Determine:

What Matters?





Why Test Performance?

Even an easy test is wasteful if it's irrelevant.

To determine compliance with requirements?

To evaluate release readiness?

To assess user satisfaction?

To assist in performance tuning?

To estimate capacity?

To validate assumptions?

To generate marketing statements?





“Just test it” Isn’t Enough

Do you know your performance testing mission?

Do you know the “Commander’s Intent”?

Can you find out?

Example from my days as a U.S. Army LT:

Mission: Secure hilltop 42 NLT 0545 tomorrow.

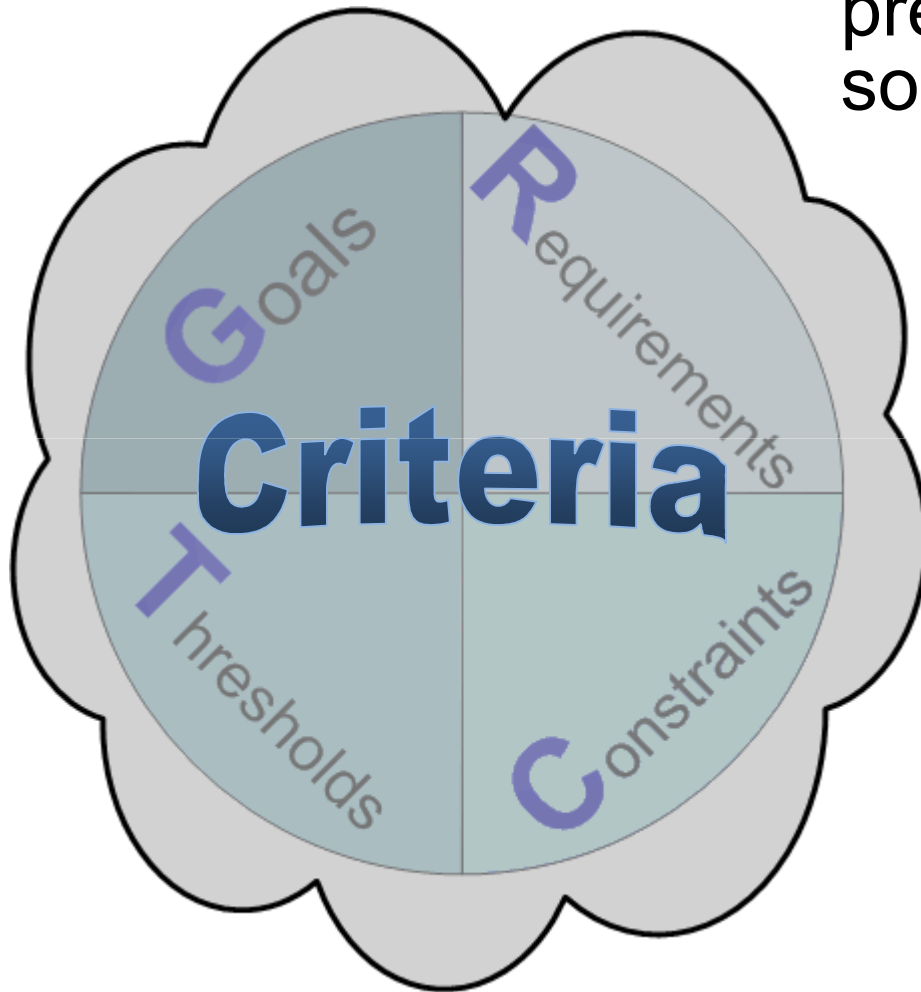
Commander’s Intent: It is my intent that the supply convoy safely cross the bridge spanning the gorge between hilltop 42 and hilltop 57 between 0553 and 0558 tomorrow.





What Matters

Performance Criteria are *boundaries* dictated or presumed by someone or something that matters.



Goals: Soft Boundaries
(User Satisfaction)

Requirements: Firm Boundaries
(Business or Legal)

Thresholds: Hard Boundaries
(Laws of Physics)

Constraints: Arbitrary Boundaries
(Budget or Timeline)





ACQUIRE

Acept

Use your active listening skills

Converse

Validate and demonstrate interest

Question

Probe, educate, and learn

Understand

Summarize priorities and value statements

Investigate

Repeat with other stakeholders, make comparisons, prototype, quantify, etc.

Restate

Return with testable, quantified criteria and/or conflicting criteria/priorities

Evolve

Embrace and communicate changing criteria





Performance Testing Objectives

What we actually hope to gain by testing performance

Are sometimes completely unrelated to stated requirements, goals, thresholds, or constraints

Should be the main drivers behind performance test design and planning

Usually indicate the performance-related priorities of project stakeholders

Will frequently override goals in “go-live” decisions

Now we determine which objectives can be achieved with “easy stuff”!





Easy Thing #2

Make friends with

Developers





Thoughts on Befriending Devs

- Which developer first?
- You want to *help them* develop better software.
- Help them to help you to help them.
- Consider “breaking the rules”.
- Show interest in **their** stuff too.
- If you do it right, they will **ask** for you on the next project.





Easy Thing #3

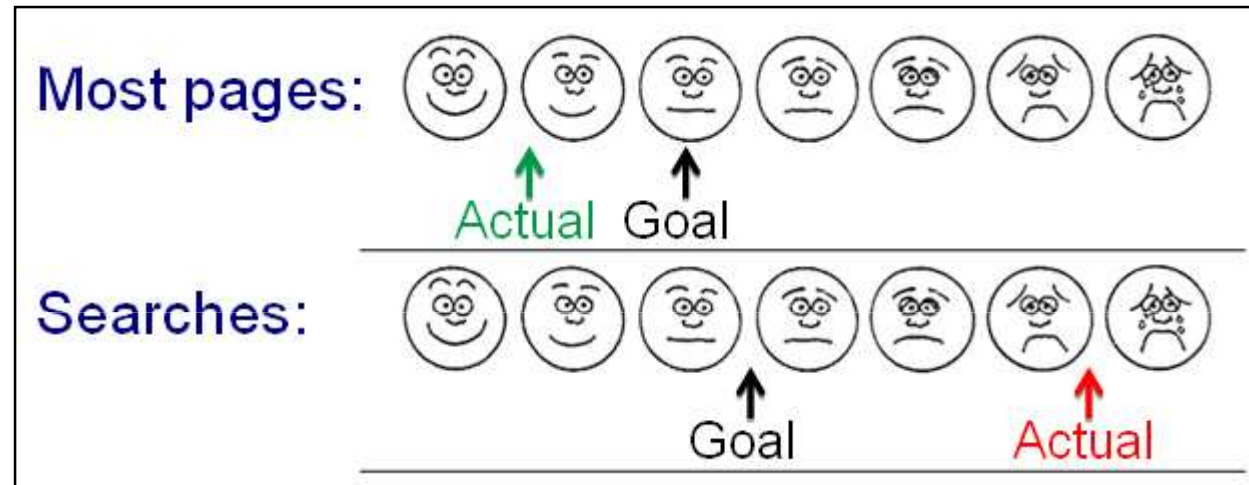
Am I annoyed?





Thoughts on Annoyance

- Who?
- Why?
- Qualify
- Verify
- Quantify
- Trend
- Advocate





Easy Thing #5

Determine:

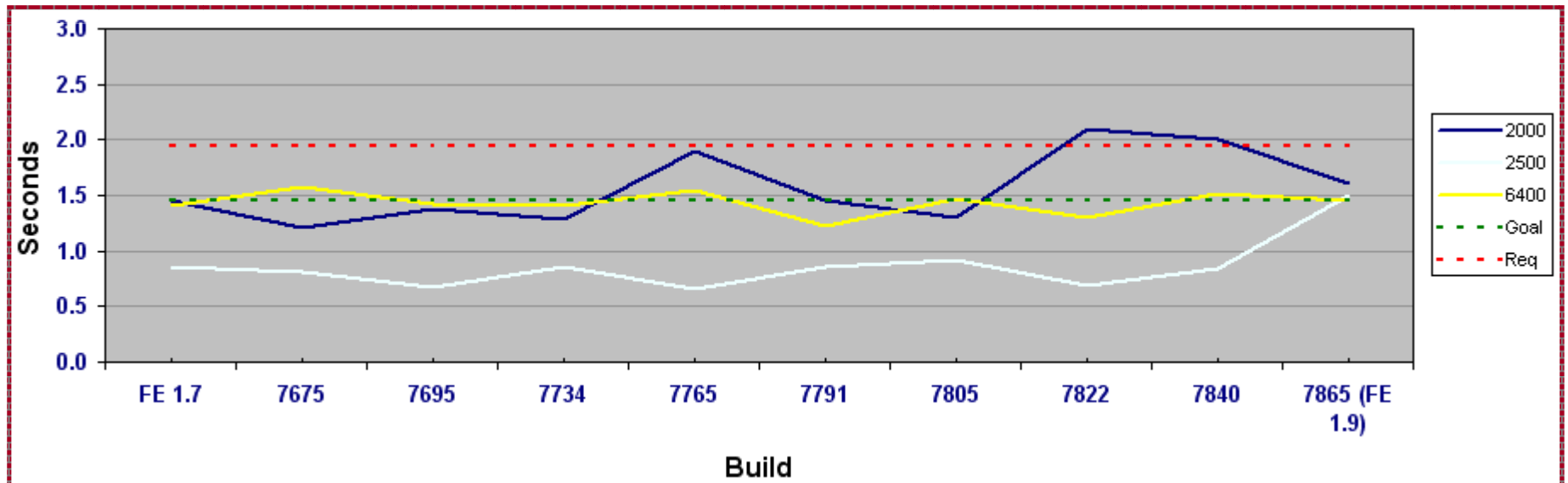
How Fast?





Speedy Speed Collection

- <http://www.websiteoptimization.com/services/analyze/>
- <http://www.websitepulse.com/help/tools.php>





Easy Thing #5

Test the Front-End with

SCORIN





What is SCORN, anyway?

Size

Media, HTML, styles & scripts – compress & minify.

Caching

The end-user's browser cache can be your best friend, or your worst nightmare, use it wisely.

Order

Get the load order of your scripts and styles wrong, and you'll lose your users every time – even though response time hasn't changed!

Response Codes

3, 4, & 5xx series response codes on individual objects are bad things.

Number

When it comes to performance, less is more (usually).

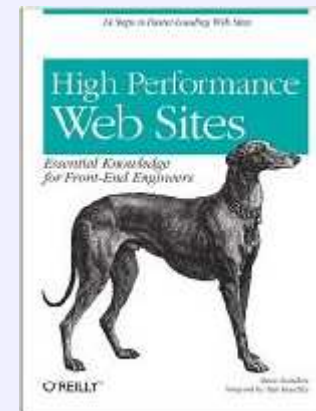




SCORN References

- *High Performance Web Sites: Essential Knowledge for Front-End Engineers*, by Steve Souders, O'Reilly, 2007.
- *Right Click -> View Source and other Tips for Performance Testing the Front End*, by Scott Barber, for AST Update, 2007.
- *Yahoo! YSlow for Firebug*

High Performance Web Sites: Essential Knowledge for Front-End Engineers



www.amazon.com/dp/0596529309





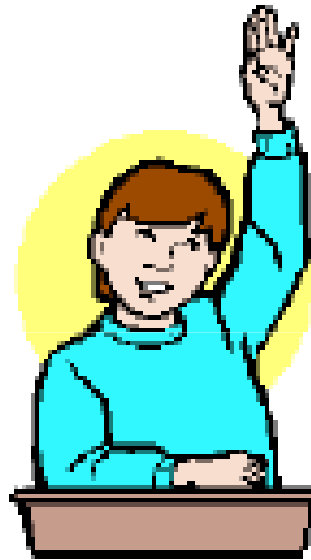
ReCap

- What Matters?
- Make Friends With Developers
- Am I Annoyed?
- How Fast?
- SCORN





Questions





Performance Testing Principles

Context

Project context is central to successful performance testing.

Criteria

Business, project, system, & user success criteria.

Design

Identify system usage, and key metrics; plan and design tests.

Install

Install and prepare environment, tools, & resource monitors.

Script

Script the performance tests as designed.

Execute

Run and monitor tests. Validate tests, test data, and results.

Analyze

Analyze the data individually and as a cross-functional team.

Report

Consolidate and share results, customized by audience.

Iterate

"Lather, rinse, repeat" as necessary.





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