



Testing and Configuration Management

Marion Ricketts – 23rd June 2005

The background of the slide features a light blue color with several overlapping, wavy, ribbon-like shapes in a slightly darker shade of blue, creating a sense of movement and depth.

Introduction

- Quality Assurance Technology Centre
- Configuration Management
- Testing

Configuration Management

Horace

- ~ 3,000,000 lines of code in 18,897 files and 219 libraries resulting in 314 executables
- 2 platforms – Linux and HPUX
- Tailored for individual customers
- Different release strategies over time – quarterly main releases to patches only
- Maintenance for old releases

From there the configuration management team moved onwards...



- Other systems – e.g. Nimbus, GIS, as well as code for varied systems across the Office.
- Databases on different Servers – Unix and Windows
- Clients on Unix, Linux and Windows
- Configuration management tools – CMSynergy, ClearCase plus a little bit of CVS and VSS. Now we are moving onwards towards Star Team
- Change management tools support quality control of the lifecycle and assist in audits

ISO 10007 definition

Technical and organisational activities comprising:-

- Configuration identification
- Configuration control
- Configuration status accounting
- Configuration audit

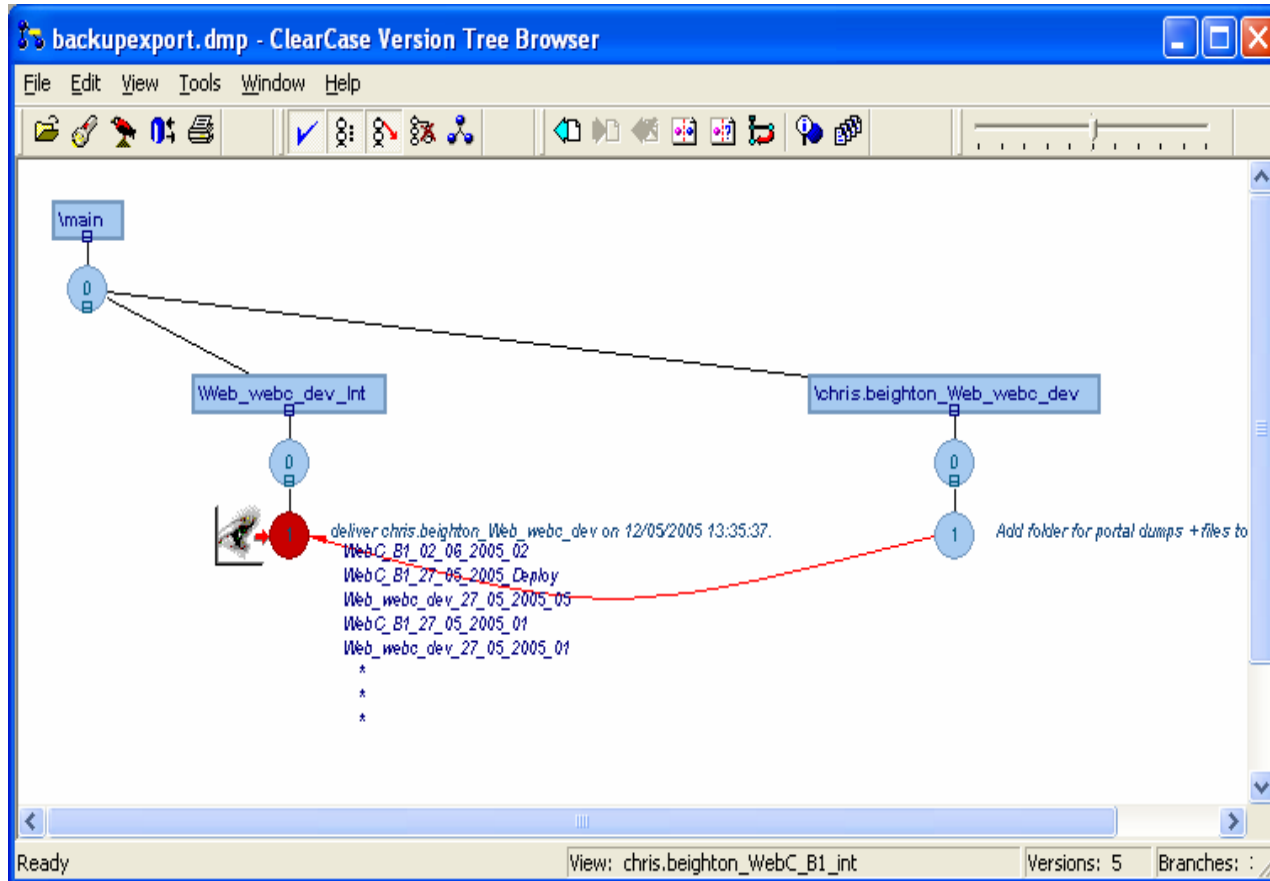
Basic configuration management!



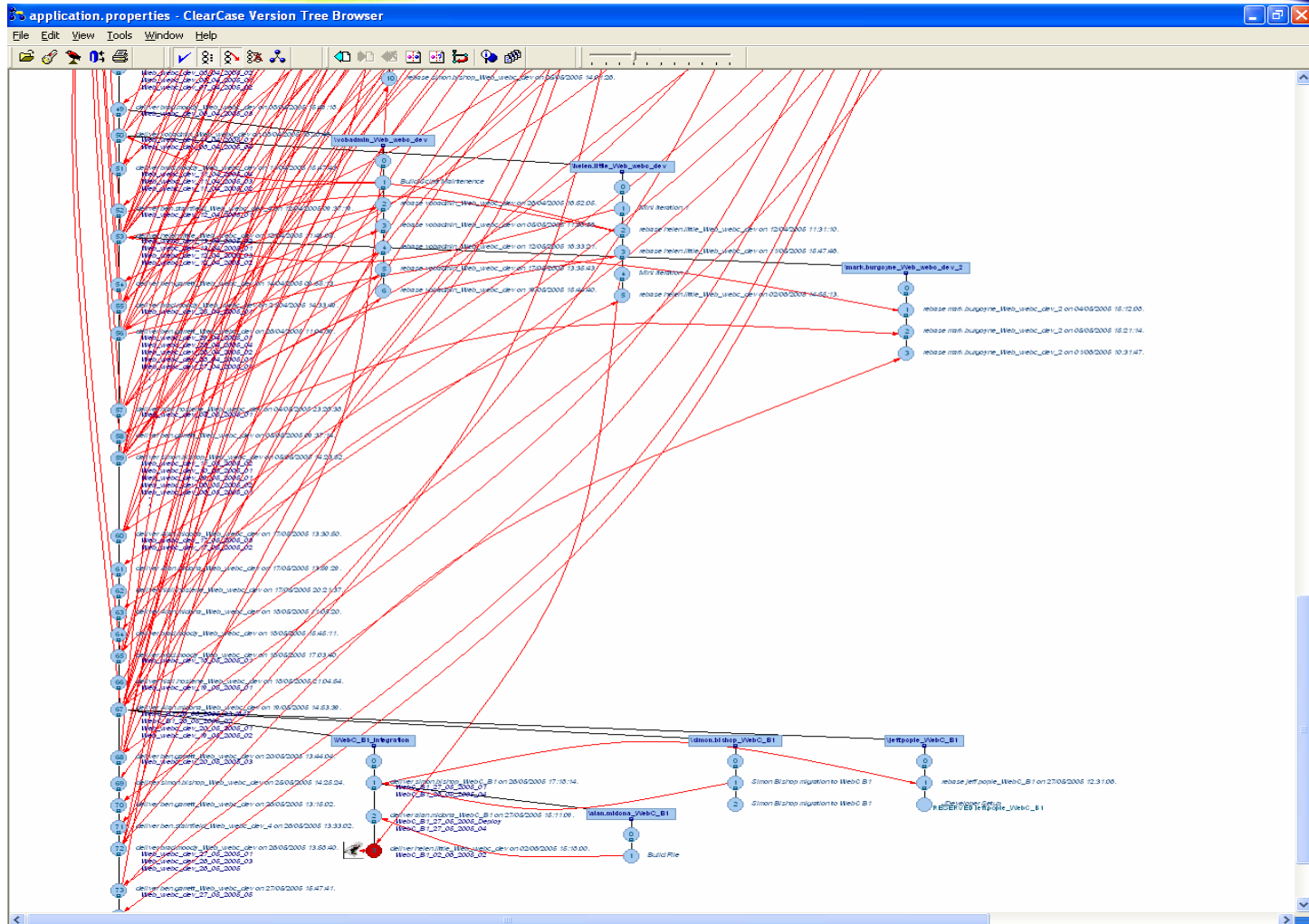
The screenshot shows a Windows Explorer window titled "U:\projects\2309 project\2309 project". The address bar shows the path "U:\projects\2309 project\2309 project". The left pane shows a folder tree with "2309 project" expanded to show subfolders like "testdata", "area forecast", "batch files", etc. The right pane shows a list of files with columns for Name, Size, Type, and Date Modified.

Name	Size	Type	Date Modified
Working new 2309v3.7.doc	237 KB	Microsoft Word Doc...	02/07/2002 17:40
Working new 2309v3.8.doc	284 KB	Microsoft Word Doc...	03/07/2002 16:01
Working new 2309v4.0 with option for test data.doc	304 KB	Microsoft Word Doc...	03/07/2002 18:23
Working new 2309v4.1 with option for test data.doc	318 KB	Microsoft Word Doc...	04/07/2002 16:35
Working new 2309v4.2 with option for test data.doc	290 KB	Microsoft Word Doc...	04/07/2002 17:38
Working new 2309v4.3 with save old ob.doc	333 KB	Microsoft Word Doc...	05/07/2002 08:02
Working new 2309v4.4 with save old obATC.doc	331 KB	Microsoft Word Doc...	05/07/2002 11:28
Working new 2309v4.5 with serial number.doc	353 KB	Microsoft Word Doc...	08/07/2002 16:39
Working new 2309v4.6 with serial number.doc	307 KB	Microsoft Word Doc...	08/07/2002 17:14
Working new 2309v4.7 with special id.doc	354 KB	Microsoft Word Doc...	09/07/2002 08:33
Working new 2309v4.8 with issue time.doc	363 KB	Microsoft Word Doc...	09/07/2002 11:12
Working new 2309v4.9 with three pressure options.doc	366 KB	Microsoft Word Doc...	09/07/2002 13:27
Working new 2309v5.0.doc	366 KB	Microsoft Word Doc...	10/07/2002 14:32
Working new 2309v5.1 - tcu.doc	376 KB	Microsoft Word Doc...	11/07/2002 13:49
Working new 2309v5.2 5 layers of cloud.doc	370 KB	Microsoft Word Doc...	11/07/2002 16:09
Working new 2309v5.3 allow ylo 1 and 2.doc	385 KB	Microsoft Word Doc...	12/07/2002 09:58
Working new 2309v5.4 with jontrim.doc	392 KB	Microsoft Word Doc...	12/07/2002 11:54
Working new 2309v5.5 with form invisible.doc	393 KB	Microsoft Word Doc...	16/07/2002 16:00
Working new 2309v5.6 with form invisible.doc	394 KB	Microsoft Word Doc...	16/07/2002 16:12
Working new 2309v5.6 with sub for colours.doc	393 KB	Microsoft Word Doc...	19/07/2002 11:33
Working new 2309v5.7 with DSM headers.doc	433 KB	Microsoft Word Doc...	29/07/2002 13:37
Working new 2309v5.8 with crash ob.doc	434 KB	Microsoft Word Doc...	30/07/2002 14:48
Working new 2309v5.8 with DSM headers.doc	435 KB	Microsoft Word Doc...	30/07/2002 14:38
Working new 2309v5.9 with trigram on Nimbus.doc	437 KB	Microsoft Word Doc...	31/07/2002 13:00
Working new 2309v6.0 with new form.doc	257 KB	Microsoft Word Doc...	01/08/2002 08:52
Working new 2309v6.1 with new form.doc	256 KB	Microsoft Word Doc...	02/08/2002 09:54
Working new 2309v6.2 with changed specials.doc	266 KB	Microsoft Word Doc...	06/08/2002 11:41
Working new 2309v6.3 with cloud tidied.doc	267 KB	Microsoft Word Doc...	06/08/2002 12:02
WORKING NEW 2309V6.4 WITH no colon in time.DOC	270 KB	Microsoft Word Doc...	12/08/2002 11:08
WORKING NEW 2309V6.5 WITH pressure on 1 line.DOC	269 KB	Microsoft Word Doc...	12/08/2002 11:27
WORKING NEW 2309V6.6 WITH pressure on 1 line.DOC	250 KB	Microsoft Word Doc...	12/08/2002 17:52
WORKING NEW 2309V6.7 WITH pressure on 1 line.DOC	251 KB	Microsoft Word Doc...	13/08/2002 10:51
WORKING NEW 2309V6.8 WITH drive mapping and checking for...	288 KB	Microsoft Word Doc...	02/09/2002 15:50
WORKING NEW 2309V6.9 WITH Xs.DOC	295 KB	Microsoft Word Doc...	09/09/2002 14:02
WORKING NEW 2309V7.1 WITH keypress send.DOC	326 KB	Microsoft Word Doc...	10/09/2002 08:44
WORKING NEW 2309V7.3 WITH reload button.DOC	337 KB	Microsoft Word Doc...	10/09/2002 09:59

The configuration management of some components is relatively straightforward



But occasionally a little more complex ..



How it should work best?



- Configuration management must begin at the start of the project
- Centralisation of all configuration management within an organisation
- What is to be managed? – documents, hardware, software, etc. require managing too!
- Identification?
- Change – how is it to be controlled – how will it link to code, hardware, documentation?
- Backups?

Which is best?

- CMSynergy/ChangeSynergy,
- ClearCase/ClearQuest
- StarTeam
- CVS
- RCS
- VSS

- Integral part of lifecycle process
- Include everything – documents, config files, hardware, scripts, etc., etc.
- Start at the start of the project, it is so much quicker

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Testing

Content

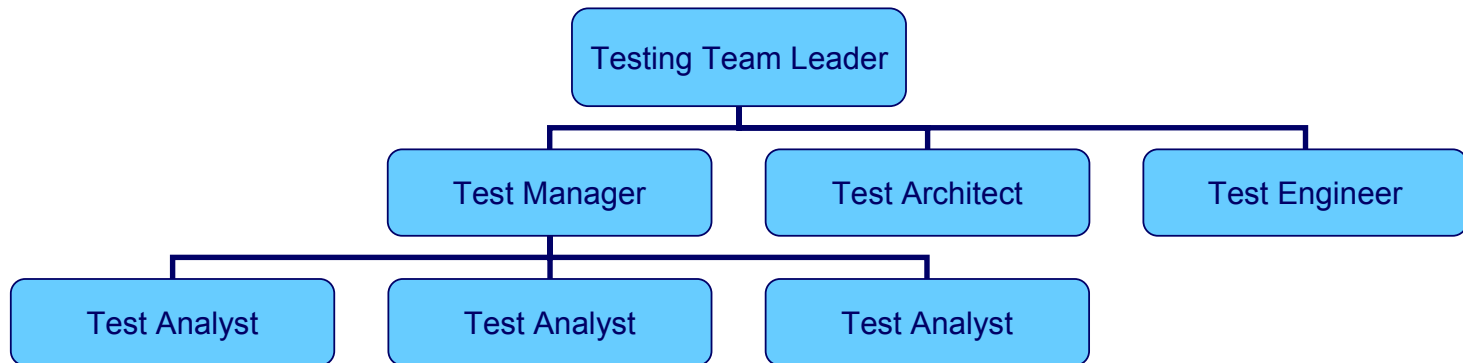
➤ Testing Team

- Structure
- Roles & Responsibilities
- Benefits of a centralised Testing Team

➤ Test Process

- Why Test
- Testers and Developers

Structure



Roles & Responsibilities

- Team Leader – First point of contact, staff management, planning, promotion and metrics.
- Test Architect – Test strategy and test approach will produce initial high level Test Plan.
- Test Engineer – Define requirements for Test Environment and new tools.
- Test Manager – Resource and co-ordinate Testing from start to finish, keeping Project Manager & customers informed & produce End of Test report.
- Test Analyst – Produce Test Scripts from User Requirements or Use Cases, carry out Testing and report defects as outlined in the Test Plan.

Benefits of centralised Testing Team

Many companies are now centralising their Testing effort and the benefits of this are:-

- Consistency
- Quality
- Managed cost
- Resource planning and management
- Accuracy
- Improve standards, processes and methods
- Improved testing skills and best practise
- Independence and objectivity

Why Test

- Testing should start as early as possible in a Project, i.e. check User Requirements are testable
- Testing should be carried out throughout the life of a Project.

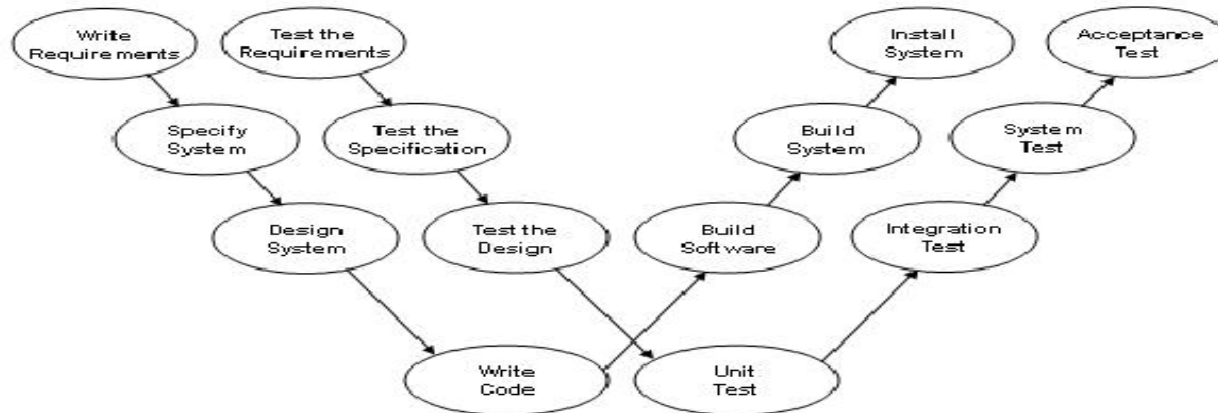
Why Test

Early testing:-

- improves quality
- reduces cost
- mitigates risk

by reducing the number of defects found later in the life cycle.

Why Test



The W-Model of testing.

Paul Herzlich introduced the W-Model approach in 1993. The W-Model attempts to address shortcomings in the V-Model. Rather than focus on specific dynamic test stages, as the V-Model does, the W-Model focuses on the development products themselves. Essentially, every development activity that produces a work product is “shadowed” by a test activity. The purpose of the test activity specifically is to determine whether the objectives of a development activity have been met and the deliverable meets its requirements. In its most generic form, the W-Model presents a standard development lifecycle with every development stage mirrored by a test activity. On the left hand side, typically, the deliverables of a development activity (for example, write requirements) is accompanied by a test activity “test the requirements” and so on. If your organization has a different set of development stages, then the W-Model is easily adjusted to your situation. The important thing is this: **the W-Model of testing focuses specifically on the product risks of concern at the point where testing can be most effective.**

Why Test

Most projects in the Met Office have a Waterfall Lifecycle:-

- Requirements (Business Analysis) – Design (Systems Analysis & Design) – Development (Program Design & Coding) – Testing - Implementation.

Why Test

Using an Iterative Lifecycle:-

- Cycles of requirements – Design – Development – Testing until either testing is completed OK and users are acceptant of the system. (Basically develop in small chunks and test until OK before moving on to the next bit of development.)

Testers and Developers

It is important for the Test Team to work closely with the Developers and maintain excellent communications.

Questions & Answers