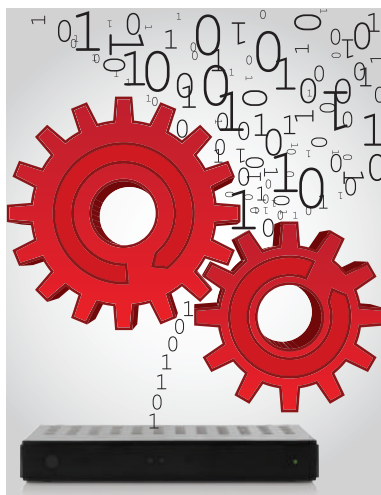




Remote
Development



Functional Test &
SQA



Continuous
Integration

At A Glance

- Integration infrastructure for multimedia devices
- Place shifting development
- Scripted automated test
- Complete device control; IR, RF, power, network
- AV capture, recording, remote rendering
- Set-top, gateway, companion device & IDTV support
- Multi-room support

Flexible tools for improved development and test effectiveness

Built on experience gained developing the world's most successful digital TV devices our integration infrastructure provides robust solutions that solve many problems encountered when delivering today's fast paced and distributed projects.

Bigfoot is part of this infrastructure providing teams access to and control of target devices such as gateways, set-tops, companion devices, IDTVs and the like.

Designed by integration and development engineers, the approach is practical and pragmatic. Bigfoot is made from commodity hardware and uses carefully selected open source components within a flexible architecture. This allows the system to be quickly adapted to cover any specific project requirements. Bigfoot is scalable, housing many target devices limited only by the communications bandwidth to the unit.

Remote Development & Test



Sound familiar?

"It doesn't happen here."

"Get someone on a plane NOW!"

"We can't fix it if we can't see it."

"I will ship you a box in..... 3 weeks."

"Can I come home yet?"

"I can't describe it, you have to see it happen."

"We will need to capture a stream and ship it on a disk."

"Your playout streams are 3 years old!"

"I can't travel for 3 months."

"We ordered 150 dev boxes but I can't find one now!"

"Something must have changed on the platform, but I can't tell from here."

"There is a delay on visas."

"We can't do all the tests on our lab system."

Features Supported

- Scalable distributed architecture
- Video & audio capture (HDMI, CVBS)
- Multi-user with full session control
- Full rate AV recording and viewing
- Full access to device. Secure debug & logging in real time
- WYSIWYG control of devices using virtual RCU
- Zero-install, browser based UI
- Monitoring for multi-room
- Power control, USB, serial capture
- DTH, DTT, Cable & IP configurations
- Secure upload of firmware

Extend your reach by place shifting development

Moving a product out of the lab and on to a live platform presents a number of logistical challenges. Development teams are increasingly dispersed and moving skills to problems isn't always achievable, it's certainly never cheap! Building duplicate platforms for developers isn't always the answer either. Large capital spend is sometimes impossible to justify and most often the duplicate is not an adequate replacement for the real thing. It has been said that the last 5% of issues take 95% of the effort. What is certain is that the last 5% of issues won't be discovered until the target is launched on the live platform.

Developing against a single device is now rare. Multi-room networks make it impractical for each engineer to have representative targets close to hand. Engineer efficiency drops dramatically as time is spent building and maintaining target networks with a plethora of devices, connections and configurations.

The remote development features of Bigfoot have been designed to address these problems. With Bigfoot, the target devices are moved off the engineer's desk whilst retaining all the usual facilities direct access would allow. The user can control and configure the device via its own UI using a virtual remote, the audio and video outputs of the device can be monitored, uploads can be securely performed. The user can interact with devices via command line or terminal session and more complex interactions can be programmed and automated. Any number of target devices are supported. These are grouped into 'sessions' where specific interconnects can be defined allowing multiple users ready access to a pool of target devices.

where experience delivers

Functional Test

Functional testing plays an important part in any SQA plan. The features of Bigfoot have been developed from a cross functional understanding of what is needed to deliver quality. There is a focus on the interfaces between and the tools required by a project's test and development functions. Bigfoot has been designed to provide features that not only capture problems but also support the triage and investigation phases that are critical to effective and timely issue isolation and resolution.

The case for automation in functional test is already well established. However, most often the programmatic features available are restricted because tests are defined using proprietary scripting languages and environments. This approach fails in a modern project TDD where a richer tool-kit is needed. Bigfoot's framework architecture allows a choice of scripting languages such as Javascript, Python, PHP or BASH. All of Bigfoot's facilities such as network configuration, image capture, device control and image analysis are made available. This approach brings the worlds of test and development closer and also enables the use of powerful 3rd party and open source libraries and tools so that best in class solutions can be quickly incorporated.

'End user' product stimulation such as IR blasting and AV monitoring is useful but often functional test environments begin and end with black box testing at a product level. Bigfoot does not follow this course and recognises that there is a continuum of test requirements during the development and integration cycles. Bigfoot's design promotes the incorporation of device based scripting, allowing the facilities of Bigfoot to be used in regimes such as unitary or API testing that stimulate different levels in the target architecture. The advantages of Bigfoot's place-shifting and session management features can be very useful in these types of tests.

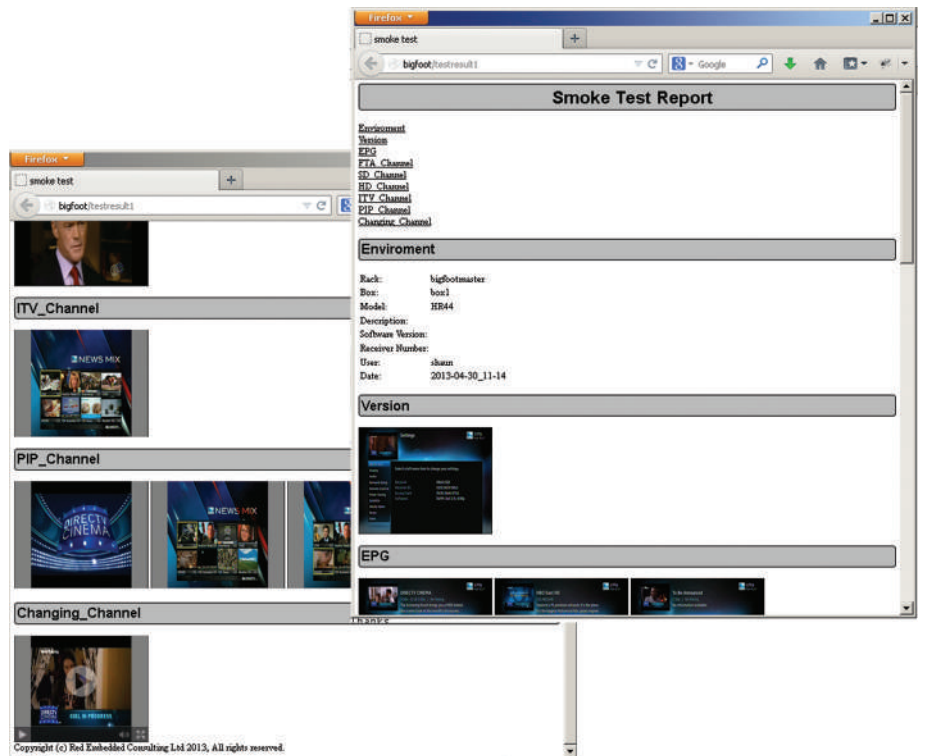
There is often a gap between exposing an issue and the ability to identify and resolve the root cause of an issue. The gap is caused by insufficient information being provided for a integration engineer to begin work. Bigfoot's reporting ability is rich and flexible. Scripts can build reports that include formatted and structured text, captures of images, moving video and audio. These outputs are correlated with other information such as script narratives, device shell outputs and debug logs.

Features Supported

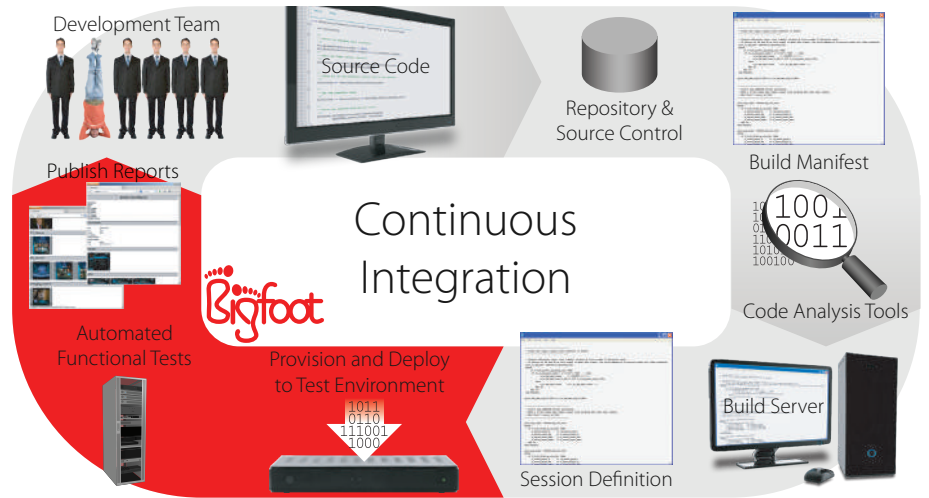
- Automated testing with choice of scripting language
- Rich formatted output
- Powerful programming support via Java libs
- HD & SD image capture & analysis
- Dynamically reconfigurable interconnect
- Product level and unitary test support

Features Supported

- Manual place shifted testing
- Stress & endurance testing
- Image matching & comparison
- Motion detection
- Black detection
- Audio analysis
- OCR



Integration Infrastructure



Features Supported

- Tests scheduled automatically
- Reporting via e-mail, issue tracker
- Automatic device configuration
- Multiple device test scenarios

About Us

Red Embedded Consulting was formed in 2008 to bring a range of practical, innovative and technology-led consultancy services to the digital technologies market.

We've built a strong reputation for our practical, thorough, cost effective consultancy services. We work closely with you and your partners around the world to realise your technological goals.

Run by a team with extensive experience in defining, developing and launching new products in the high volume digital consumer market, the group has gone from strength to strength. Based in the UK, the company is privately owned and now employs over fifty best-in-class engineers.

Continuous Integration

Automated workflow with continuous integration tools

Continuous or frequent integration processes are needed to keep a fast paced development project on the tracks. At the heart of any continuous integration process is the need to perform automated test. This is more difficult to achieve than it first appears.

Automating specific tests is the easy part. Large teams mean lots of commits, lots of commits mean lots of builds and lots of builds mean lots of tests. Scheduling tests and managing the target device pool becomes a priority. Making sure that the infrastructure will scale with your project is perhaps the hardest challenge.

Bigfoot has been designed from the outset to be part of a coherent infrastructure that includes common tools used in a continuous integration project. Bigfoot has been integrated successfully into workflows based around tools including multiple repositories (GIT, mercurial, SVN) ticketing systems (trac, Jira) and auto build managers (Jenkins).

Contact Us

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