

IP Security: Covering Your Bases in a Global Development Environment



Governance. Auditing. Patent lawsuit.

These all sound scary - and if you have any official responsibility for your company's intellectual property (IP), they are scary concepts. The SEC and patent attorneys may sound like monsters from a fairy tale, but they're real, and they can get you if you're not prepared.

In order to be prepared in the case of an IP dispute or a Sarbanes-Oxley compliance audit, you need to be able to answer five questions about your IP at any time.

The Five Questions You Have to Answer About Your IP

- When did those changes happen?
- Who made changes to your IP?
- Were they authorized to make changes to your IP?
- Why did they make changes to your IP?
- What changes did they make?

Not being able to answer these questions may cause your company a big headache (and cost it a lot of money). Enterprise version management gives you the tools to respond effectively to any of these questions, but distributed repositories like git pose new challenges.

Let's consider a few scenarios and see how enterprise version management provides the foundation for using distributed repositories without sacrificing governance.

Patent Lawsuits

Patent lawsuits are much in the headlines, thanks to the perpetual mobile patent wars.¹ The web of mobile patent disputes is tangled to say the least.² More generally, the trend of patent infringement filings is on an upward tick again after a recession-related drop in 2008.³

In order to defend against a patent infringement claim, you often need to prove that you created original work and were using it before the patent was filed.⁴ If you can trace the evolution of your IP back to its origin, and prove that you (your company and its employees) generated that work, you will stand a much better chance in the dispute. To put it another way, if you can show that your digital animation started as a paper napkin sketch, or that your beautifully polished code started life as a won't-even-compile prototype, you can show original authorship.

Your version management system of record should be an immutable source of truth, able to hold up to a legal dispute of this sort. Perforce fits the bill, as a properly administered Perforce system preserves the history of every change. Reproducing the state of the entire repository at any point in time, including the person who produced each change, is a matter of a few simple reports. Comprehensive audit logs back up the whole data trail.

When distributed technology becomes part of the software developer's tool set, the situation becomes more challenging.

¹ Perforce Software is not providing legal advice and the particulars of any IP dispute are unpredictable.

Consult a qualified patent attorney if you require formal legal advice.

² See Reuters graphic <http://blog.thomsonreuters.com/index.php/mobile-patent-suits-graphic-of-the-day/>

³ See <http://www.patentlyo.com/patent/2012/03/patent-infringement-litigation-complaints-on-the-rise.html> and <http://www.law.com/jsp/cc/PubArticleCC.jsp?id=1322399109049>.

⁴ <http://inventestep.net/2011/09/21/america-invents-act-prior-use-defense/>

Many distributed version management systems do not reliably record the author of each change, and some even include the ability to effectively rewrite the history of the repository. Audit logs are not a standard tool of distributed repositories. At best, time consuming and expensive digital forensics work would be necessary to verify the history of a distributed repository. That's why using Perforce Git Fusion to record all activity in Perforce is the best way to incorporate distributed technology without sacrificing IP governance.

Planning for the Future: America Invents Act

Recent changes in the America Invents Act of 2011 place more importance on when an invention was disclosed, not simply when it was invented or when the patent was filed.⁵ Generally, a patent is awarded to the company that files first, but making an invention publicly available (e.g., by disclosing it at a trade show) gives you a one year grace period to file a patent and protect your rights to the invention. So once that act takes full effect in 2013, you'll want to make sure that any related material, even a product brief distributed at a trade show, is strongly versioned.

Enterprise version management lets you store any supporting material along with software IP. Product briefs and slide decks that disclose proprietary information can all be stored in Perforce. These materials will then enjoy all the advantages of enterprise version management, and you'll ensure that there are no gaps in your IP defenses.

Compliance Audits

Any IT that touches financial reporting is subject to Sarbanes-Oxley process control requirements. Any IT that touches patient medical data is subject to HIPAA compliance requirements. ISO standards govern how the automotive industry handles safety-related technology. Most industries have some regulatory compliance problems to solve, and not being compliant can pose a material risk to the company. Being able to answer the five questions listed earlier puts you in much better standing to reply to any compliance audit.

Although demonstrating compliance often involves inspecting the entire process by which your company operates, enterprise version management gives you a solid framework to build on. As noted in the previous section, you can confidently show who changed your IP, when those changes happened, and what changes were made.

⁵ <http://www.fastcompany.com/1822846/untangling-the-real-meaning-of-first-to-file-patents>

Enterprise version management can also help you answer the two more process-related questions: were the changes authorized, and why were they made? Consider first the question of change authorization. Access control in Perforce lets the system administrators specify, down to the individual file level, who is allowed to modify data. The access control records themselves are versioned and can be recovered at any time, letting you prove that only authorized users were allowed to modify certain records. Distributed repositories, on the other hand, do not offer granular access control. Using Perforce and our Git Fusion product to enforce access control rules on work done in git is a key solution that maintains proper IP governance.

The question of why changes are made is a workflow and process question. In many cases answering this questions boils down to linking each change to a record in a task management or requirements system. Changes in distributed repositories can be linked back to a task record, but it is difficult to enforce the existence of those links as changes are pushed between repositories (or altered altogether).⁶ Pushing changes into Perforce via Git Fusion provides a fail-safe valve to make sure that each change is somehow linked to a task record, and that such links can never be changed.

As noted earlier, enterprise version management lets you store any supporting material along with software IP. Put requirements documents, planning spreadsheets, and other materials that affect the product under the version management umbrella, and you'll have a strong IP audit trail.

Conclusion

Introducing distributed repositories into your development environment poses new challenges for IP governance. Using Perforce and Git Fusion solves those challenges by recording git activity in a reliable system of record. Enterprise version management provides the governance that lets you respond effectively to any questions about the evolution of your IP.

⁶ In a nutshell, enforcing the existence of task links in git commits requires hooks on each affected git repository. If git history is ever rewritten (e.g. two commits are squashed into one), it is an open question how to treat the task link.