Versioning WebDAV Server
Vision Statement

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1 Scenario

Wendy Workaholic puts the finishing touches on a presentation for the next morning, saves it to a file server, and sends an e-mail to the project team asking them to look over the presentation. On the way home that evening, she realizes that she forgot to include an important point in her presentation. Fortunately, the file server that she uses is not an ordinary fileserver, but a WebDAV server that supports distributed authoring and versioning. From home, she uses the MacOS X WebDAV file browser to connect through her company’s firewall to the WebDAV server. She is able to easily open the file and make the changes.

Meanwhile, her co-worker Xavier is making another change to Wendy’s presentation while flying back from an account meeting. Before the flight, he used a WebDAV-enabled CVS client to checkout a copy of her earlier draft of the presentation. When he gets home that night, he connects to the Internet and commits his changes. Since the WebDAV server supports the new versioning extensions, his changes are automatically merged into the file with Wendy’s change. When Wendy arrives at work the next day, she receives an e-mail from Xavier explaining his changes and opens the updated presentation containing their combined changes.

2 Product

Versioning WebDAV Server: WebDAV (Web-based Distributed Authoring and Versioning) is an extension to the HTTP protocol which allows users or groups of users to collaboratively edit and/or manage documents on a remote web server. The IETF DeltaV working group is standardizing additional extensions for version control with DAV. Apache currently includes a module which only supports the distributed authoring aspects of WebDAV and we envision a similar module which implements the versioning functions of WebDAV. This server will store data in a back-end data repository based. The server will be implemented as component to be used with the market-leading Apache web server.

3 Market and Stakeholders

Our analysis shows that WebDAV is quickly being adopted by a variety of vendors including Microsoft, Apache, Oracle, Apple, Eazel and many others. This growth rate is still accelerating with no signs of immediate changes. Since these vendors have already committed to WebDAV we can be certain that this market will continue to exist for the foreseeable future. Furthermore since these vendors have previously implemented other WebDAV extensions it is reasonable to assume that they will provide clients which use
the DeltaV\textsuperscript{1} extensions.

In addition, market research shows that the user community has expressed a desire for a CVS client that uses the WebDAV protocol. Following our initial product, our company should consider entering the WebDAV client market with a WebDAV-enabled CVS client.

Our product will be focused at the Unix and Unix-like server market since we expect Microsoft will capture the Win32 market for versioning WebDAV. Just as many enterprises use Samba for high-end file servers for Windows clients, we see Unix servers with WebDAV as a scalable option for high-end servers. In order to appeal to this market, we will open source our project and seek to have it included in the Apache distribution.

This product will be most appealing to teams who are working collaboratively on documents and web sites. As can be seen from the scenario, we see the target user-base as mature computer users in the sense that they see the value of version control systems and are willing to use them. However, client vendors may successfully increase the size of the market by hiding many of the problems with versioning and conflict resolution from the users.

In addition, there is a large existing base of projects using CVS for source-code control. The CVS client/server protocol has problems traversing many firewalls, thus limiting the use of CVS. By providing the same functionality in a WebDAV server, we expect to acquire some of this market as well by providing a solution with better interoperability. We believe that a CVS-like interface to a WebDAV server would be readily acceptable to this community. In addition, the overall growth in number, size, maturity of projects and developers leads to more need for version control.

However, the customers that will choose to use our particular product are more likely to be network administrators who are fulfilling these users’ requirements. We will reach these customers via distribution channels such as Sourceforge, WebDAV.org, Apache.org and Freshmeat. Since this will be an Apache module, any person searching for a module such as this will find it via mention on the Apache website. Additionally all current projects pertaining to WebDAV are listed on WebDAV.org, by which people familiar with the technology will find our server. Furthermore the Sourceforge project allows a large audience of open source users or early adopters to follow and/or become familiar with the project.

Broadly, we view our customers as the Open Source community. Our product must be satisfactory to the needs and customs of that community. However, there is no single interface to that community that can be used to determine its desires. Instead we will depend on a combination of inference and experience as well as attempts to draw-out interested customers and project participants. Other interested participants will hopefully become part of the project team in the long run.

4 Risk Analysis

This document focuses on project risks relating to the feasibility of performing a relevant project on time and with the given resources. As this is the initial project documentation, all risks described below are newly identified.

4.1 Misidentified Market Need

Market need for a brand new type of product is difficult to gauge.

Resolution: The project team has no specific doubts as to the market need, but this need cannot be stated

\textsuperscript{1}DeltaV is in actuality the name of the IETF working group dealing with the versioning part of WebDAV. In general we will refer to this part as DeltaV in order to differentiate between it and the other parts of WebDAV
with certainty. Our analysis shows that WebDAV is quickly being adopted by a variety of vendors including Microsoft, Apple, Apache, Eazel, and many others. This growth rate still seems to be accelerating with no indications of immediate changes. These vendors have supported other extensions to WebDAV and so there is a reasonable expectation that they will also implement the DeltaV extensions as well and will be a catalyst for this market. Thus, the project team has concluded that this is an acceptable risk.

4.2 Risk of not being adopted

There is a risk that customers will not adopt our product if we are not first to market with an implementation that meets the user’s requirements.

Resolution: To accelerate our development process and improve the comfort level of customers with our product, we will implement our server as an extension component to the market leading Apache server. In addition, we will open source our product in order to gain mind-share with early adopters and developers. If we are the first to market, it is quite likely that our server will be included in the Apache distribution and become the De-facto standard.

4.3 Risk of resource limitations

There is a risk that further analysis of this project will show that it cannot be adequately implemented given the fixed time and resource constraints.

Resolution: We intend to limit the amount of software development by reusing software components such as Apache and CVS. However, this risk cannot be fully resolved at this time. It is important to the success of the project, that the following actions be taken quickly: First, we will identify the functions of our product by examining the DeltaV drafts and studying customer needs and use cases. We will then map these functions onto the functions provided by CVS and perform a gap analysis. This gap analysis defines the amount of development that must be done for this project. Only once it the analysis is completed, can we resolve this risk. As a contingency plan, functionality should be prioritized in order to identify functions that can be dropped from initial versions of the product.

4.4 DeltaV standard may change

The IETF standards process has not completed work on DeltaV yet. As such, it is subject to changes which may invalidate our work. Time to market concerns also make it risky to wait until the standard is complete.

Resolution: Preliminary reviews of the draft show that it is similar to existing versioning technologies and the project team estimates that the risk of fundamental changes being made is very small. However, the software design and implementation must be flexible enough to allow minor changes in the draft to be accommodated with low cost.

4.5 Lack of interoperability

There are no known implementations of DeltaV clients or servers that can be used for interoperability testing and validation of our implementation.

Resolution: The IETF working group will likely conduct bakeoffs once multiple vendors have initial implementations. If our implementation is well-engineered and maintainable, minor adjustments can be made at that time.
4.6 Technology supersedes WebDAV

It is possible that some time in the future some technology might supersed the WebDAV protocol family and/or HTTP.

Resolution: No emerging technology shows promise of supplanting HTTP. Additionally HTTP has long ago achieved critical mass making it a protocol whose future should be fairly stable. Furthermore WebDAV is experiencing an upswing, being incorporated into products by Microsoft as well as online storage providers etc, thus it is expected that WebDAV will continue to grow.