



BRINGING CLOUD COMPUTING TO TRADITIONAL DESKTOP APPLICATIONS

Overview

Our client, a fast growing startup in the Silicon Valley, has built a scalable web based collaboration platform to help businesses share content and general storage within and beyond their organizational boundaries. Our client is positioning this online storage solution in terms of a 'platform as a service' (PaaS) model. This product offering was initially consumer focused. However to expand the product reach our client introduced an enterprise offering, targeting larger organizations and emphasizing collaboration tools.

Our client's solution based on private cloud offers simplified online content management and accelerated team productivity to our client's enterprise customers. This solution also helps connecting a user base of more than 5 million, including 50,000 business users within and outside the enterprise using a simple yet secure and efficient collaboration platform.

Engagement Situation & Challenges

Our client wanted to leverage the PaaS model of solution and accelerate the user base growth by providing the customers a unique collaborative offering in cloud computing space. Our client had already established leadership position in file sharing through desktop, mobile and web worlds. Microsoft Office being the most popular and preferred desktop application suite among enterprise users, our client wanted to provide ease of collaboration directly from their MS-Outlook and MS-Office. This required a seamless integration of these applications with client's PaaS platform.

Our client's requirement was to develop two different plug-ins, one for MS Outlook and the second for MS Office suite, viz. MS Word, MS Excel, MS PowerPoint, MS Visio and MS Project. These plug-ins would allow users to upload and save Office files directly to app storage folders. Our client wanted to ensure that the 'power users' who had complex folder arrangement and huge file sizes can have a seamless experience when they navigate the folder structure

Additionally our client required a partner with well established testing methodology and test benchmark processes to ensure that the plug-ins can be released to a wide user base having distinct desktop configurations.

Another requirement was to create wizard type custom installers for the plug-ins which would also build the necessary environment in the background at run time so that the plug-in does not fail to

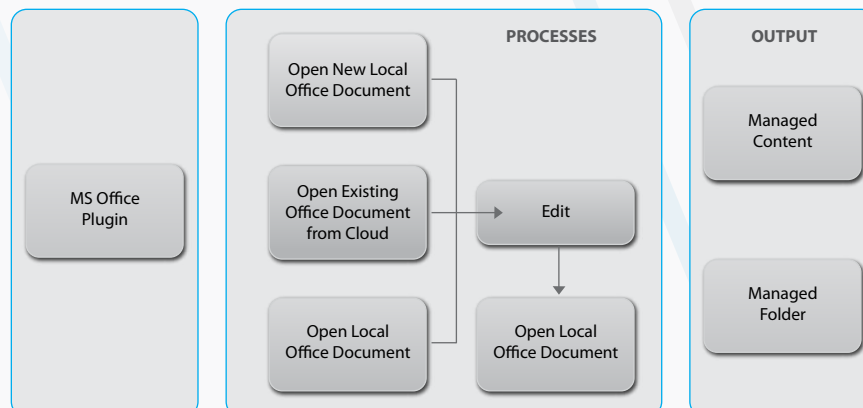
initialize due to missing system components. The installer was also required to have an in-built auto-uninstall capability before upgrading the plug-in. Additional condition was that the installer should be able to manage the necessary privileges for the plug-in to work seamlessly under standard and admin user for Windows Vista & Windows 7 OS.

Our client was looking for an agile innovative partner who will understand the demands of a fast growing successful technology company and provide competitive offerings not only on the Microsoft platform, but also in the web and mobile environments. Our client wanted to partner with a product engineering company who would adapt to the evolving requirements of the products and yet keep low turnaround time.

Key engagement objectives

- ♦ Ensuring the plug-ins are compatible with different flavors of Windows operating systems all flavors of XP, Vista and Windows 7
- ♦ Building compatibility with MS Office versions - 2003,2007,2010 which are used by majority of MS Office users
- ♦ Architecting the plug-in to run on both 32 bit & 64 bit machine types using single codebase.
- ♦ Handling 'power user group' having huge folder structure with size of approximately 100 GB stored on the client platform in the cloud
- ♦ Installing both MS Office and MS Outlook plug-ins via a single custom wizard type installer using Visual Studio instead of licensed 3rd party installer
- ♦ Building an installer with silent install capabilities to ensure the smooth loading of plug-ins
- ♦ Testing the application for various desktop configurations, unique for different users
- ♦ Meeting aggressive timelines with minimum 95% user acceptance success rate among 5,000 simultaneous users

MS office Conceptual Diagram



Xoriant contributions

Xoriant with its expertise on Microsoft, web and mobile technologies and proven successful engagements in Agile methodology proved a right match for the client requirements.

Core development team comprising of a technical architect and technical lead from Xoriant - Microsoft Center of Excellence had a series of discussions/meetings with our client counterparts to gather finer details of this engagement.

Our team proposed a modular architecture for plug-in application which is both secure and scalable to meet the clients evolving requirements. Xoriant also recommended the use of secure API based REST architecture to connect with our client's web platform. By designing a 2-tier application framework, the Xoriant team built a loosely coupled architecture allowing our client to incorporate additional features with minimal code changes.

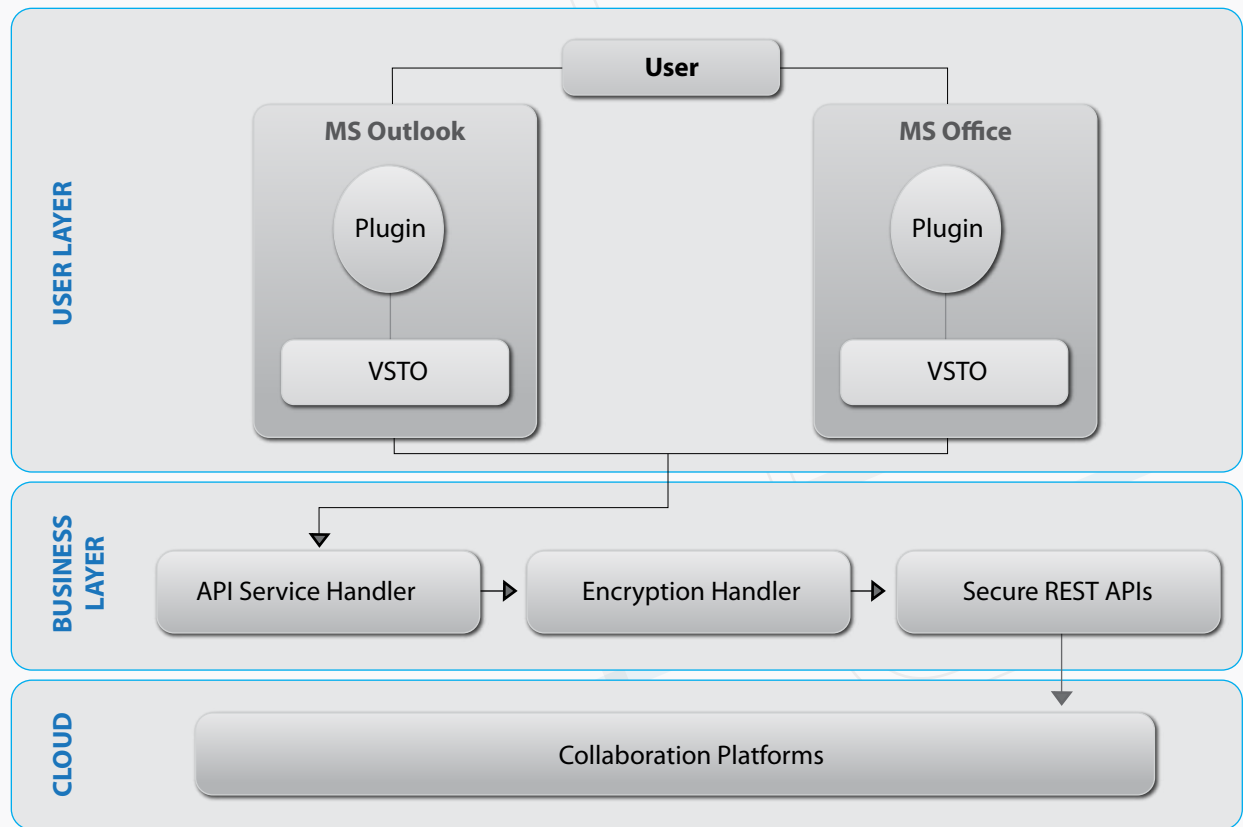
Xoriant recommended using 32 bit XP machine with latest service pack and Office/Outlook 2003 as base platform for developing the plug-in to enable scalability with higher versions. VSTO technology was used to design diverse functionality requirements for MS Office & MS Outlook plug-ins. The development team incorporated caching mechanism where the user's server folder structure was cached in the background when they navigated the folder hierarchy. This helped in reducing the server calls when the user wanted to revisit the same folders thereby saving time and improving overall application performance

Xoriant team architected a generic installer with capability to install both the MS Outlook and MS Office plug-ins. Additionally the installer had a specially designed feature to silently download & install the missing system components on user's machine to ensure that the plug-in never failed during its invocation.

Xoriant Quality engineering group defined a comprehensive testing process for this engagement. A unique sub-system was set up within our QA lab which covered various combinations of Windows OS, service packs and machine types. Specialized tools like VMware were used to create multiple user environments to cover maximum possible unique test scenarios.

Tools & Technologies

- Net Framework 2.0
- C #
- VSTO SE
- VS 2008 IDE
- Client API's
- XML
- PIA
- Bugzilla, Tortoise CVS



Xoriant leveraged Bugzilla and TortoiseCVS tools for bug tracking and change management which served as the central bug tracking & repository systems for both internal/client QA teams.

Xoriant Major Contributions

- ♦ Developed MS Outlook plug-in which allows users to save/download attachments from their e-mails directly to the client platform and MS Office plug-in which allows users to open & update files directly on the platform without having to create any local copy.
- ♦ Designed RIA based rich user interface to provide enhanced usability for the users.
- ♦ Implemented mechanism to cache user folder hierarchy thus improving overall application performance
- ♦ Used XML as the transport mechanism between the plug-ins and the client platform due to its wide acceptance and ease of interface with 3rd party applications/systems.
- ♦ Defined a generic wizard type installer which was integrated with both MS Outlook and MS Office plug-in to facilitate installation and up-gradation of the plug-ins
- ♦ Built intelligence within the installer to scan the target machine for pre-requisites and

install the missing components from the web in the background without halting the installation process.

- Adopted versioning of installers to enable auto un-install of earlier instances of plug-in during newer updates.
- Created and followed a certification matrix for testing the plug-ins in different environments (combination of flavors of Windows OS, service packs and machine type).

Client Benefits

- Provided our client 'first mover' advantage over its competition since there was no product for integration of the collaboration platform with MS Office suite available in the market
- Enabled our client reach and maintain a leadership position in the collaboration cloud segment by integrating its PaaS solution with most popular MS Office suite
- Added 30% new enterprise customers to their portfolio after the plug-in release
- Reduced the end user workflow (processing) time by more than 50% leading to improved customer satisfaction
- Achieved time to market goals and cost advantage due to offshore model of project execution
- Enabled our client's engineering team to focus on core competency areas as Xoriant team was involved in end-to-end plug-in development

Client Testimonial

Xoriant's proficient engineering team has enabled us to deliver a robust product within the aggressive release schedule. Their stringent QA process with committed team ensured an error free release. I would like to acknowledge the remarkable efforts of all Xoriant team members for making this a success.

- Project Director