

SupraSphere Project Outline

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The Big Picture

Thank you for your interest in the SupraSphere project. After a long incubation period, we are happy to announce the release of the SupraSphere source code into the wild. We feel that the underlying DNA and structure of the project has sufficient form to allow it to grow out of the womb, out of the ground, and blossom in unimaginable ways.

Personal Cloud

The overall goal of the project is to integrate numerous communication types in a single interface, where data is stored in a secure “Personal Cloud” (PC), accessible anywhere from any device, but centralized and federated around the individual. A single individual might have multiple servers or virtual dedicated servers that hold their profile and data, where everything is automatically backed up and intelligently routed according to usage behavior. Login to your car, your driving music has been pre-populated to the car's audio device. Your DVR media, digital camera photos and videos, voice mail, etc. all get saved to your PC.

In the same way that SupraSphere currently supports multiple views of the same information, each one providing a different context (Dialog View, Inbox View, Preview), we would like to have emerge many different interfaces for viewing information contained in the PC. Finding information can then become much easier, such as finding photos taken within a certain distance of a spot plotted on a map, music listened to at a friend's dinner party, or some concept that a friend of a friend was talking about in passing.

Storing information in a PC rather than in other various servers or grids out on the Internet will hopefully trigger much more innovation and easier integration and contextual searching of information. Privacy offers the psychological space for innovation where people can internalize the model in a way that provides the sense of security to enable sophisticated networking applications. Otherwise there is an inherent block based in the underlying architecture of the environment requiring the storing all of one's information on external servers in all circumstances. Pointing to local hard drive storage as a way to keep things private does not work when more and more applications are moving to the web and the only real context to view data is the web application where it gets created in the first place. We need the equivalent of the desktop hard drive in the cloud. Data portability across “Web 2.0” silos is good, but not really the answer when there is no “home” on the Internet that the individual can truly call their own. Having such a home base solves so many problems at once and can open the flood gate to the SOA future that many recognize as inevitable.

The Social Web

Even though we're talking about a “personal” cloud, we envision social applications that utilize services and interfaces exposed from within the PC. Recently social networking sites have shown tremendous promise in mapping the social graph. However, their highly centralized nature makes some of the true potential of the social web out of reach. In particular, being able to use social relationship metrics as a form of actual currency (think credit card...it's all digital now anyway) will be very powerful. Having a distributed social architecture will scale more easily to individuals and

communities, where things like informal digital democracy can emerge. For example, a proposal or poll could be sent out to all people who live in a neighborhood. Something as simple as fixing a pothole could be routed first to the community block for approval, complete with pictures geotagged to the exact location, then to a company with a good social credit rating to fix it. It's set theory, with interlocking spheres in a Venn diagram of trust.

So What Is It?

SupraSphere has always been hard to describe because it crosses a number of application categories. It's at once:

- A web browser
- Mailing list manager
- Email client/server
- Instant messenger
- Search engine
- RSS reader
- Bulletin board system
- Contact manager
- Threaded discussion system
- Internet/database file system
- Workflow engine
- Voting engine
- Social network
- Banking system

Banking System?

The idea is that as soon as enough people have a personal cloud, people can store their money in their sphere but in a way that they have control over its definition and evolution beyond just spending it or saving it. Money is not value neutral; the medium is the message and the definition of money affects all transactions that occur through it.

Here's an example that will hopefully feel liberating to be able to consider. Let's suppose a new band wants to release a CD. How are they going to make money off it? Why not just create the money? It's an authentic American ideal to create value out of nothing, particularly based on creative products, so having a currency backed by digital goods makes sense, but only if it is controlled by individuals through personal relationships.

So, the band issues 5,000 units of currency into circulation backed by their digital album, where the issuance required a vote from at least ten one degree and five two degree contact associations to be approved. As soon as it's approved, the money is in their account, and spendable. (Note: this is only one example of a voting model. The actual models themselves will have to emerge in a highly "chaordic" fashion.)

However, rather than spend it, they can choose to promote the album and the more times that other people download + link, the more interest on the original 5,000 units accrues in their account. Downloading will actually create a bidirectional link/connection between the person and the band, and when it goes to get spent, a certain number of the transactions that created the currency and interest will be verified by replaying a certain statistically significant number of the transactions. If for some reason

one of those transactions fails, for example because the downloader's PC has become unavailable, there will actually be a pathway from the band to someone they know to the person via the “degree of separation” meme. At that point, it becomes a personal reputation thing, where the person will run the risk of being kicked out of the band's sphere because his friend's friend screwed up, so it would be enforced on a social level through existing social relationships.

Those who download, link and allow others in their network to reference the content will also accrue interest. The overall percentages of the original 5,000 units that are earned by the band can be worked out ahead of time, and certain people promoting to their social network might request a larger percentage referral from the band than others promoting.

It's fine to theorize about these things, but there is nothing to prevent a system like this, which could be (re)configured in any number of ways, from being used as actual money. With ubiquitous wireless, we can hook up a transaction system that uses the social network it, and as long as enough people believe in and value the underlying exchange model, it will be used.

Shorter Term

Ok, in the mean time, there are a bunch of cool things we're working on and would welcome collaborators and contributors.

Searching + crawling + filtering+ querying + alerting of RSS feeds stored in the system, looking at different metrics such as most read feeds, new feeds since last queried, feeds of X degree friends.

Tagging and search relevancy, looking at click through metrics, representing those as a part of a dashboard that shows most clicked-through and referred within a given sphere

Document editing and ability to modify web content through approval workflow. (See SEditMessage.java as an example). In addition to highlight, right-click “Comment”, we will add right-click “Edit”. Similar to track changes features in word processing, this can be done as an overlay workflow for email documents, websites, or any content displayable in a web browser. If designed correctly through a distributed, secure filesystem with version control, where the website itself sits on the filesystem, SupraSphere can function like an overlay content management system for websites for only the content itself.

Integration with other communication types and systems such as VOIP, voice mail, video, doing cool queries such as “Show me the most watched show on my block”, or “Most scheduled show to be watched”

Peering of servers in a CDN structure at least for backup and redundancy. The thinking is to have a P2P architecture, but it's more like S2S (Server to Server) since the peers are dedicated servers.

Much Shorter Term

There are quite a few known bugs, as with any piece of software. The majority of them are minor, but fixing them would be a good way to get acquainted with the code and overall architecture in order to work on larger more complex aspects of the system. There are also areas to work on that are fairly isolated but of very high visibility, such as the overall tagging, searching, and re-searching framework.

Examples of some known bugs:

- Hitting the back button after viewing a link from an RSS feed does not go back to the RSS feed
- Tagging in group sphere should give option to publish as new tag to personal sphere
- Attachments should forward when functioning as a mailing list
- Presence information needs time zone converter
- No way to create username account from existing contact
- Going back in history slow and doesn't change messages in table
- Mailing list needs to show from as user who sent, not sphere name

Known usability issues and needed enhancements (partial list):

- Change passphrase next login
- Lock out account
- Create accounts for spheres where not already member
- Delegate account management to users in spheres, with invitation process
- Better type-ahead find on all user lists
- Forward individual message to group
- Change status either locally to a sphere or globally across spheres (showing in directory)
- Better overview of messages, use directory as dashboard to show new messages since last login, particularly confirm-receipt popups in spheres that don't open as a part of default tab order
- Statistics page to see click-through for tags and links
- Re-search using other peoples tags and sets such as “only new tags since last re-searched”
- Contact name lookup auto-complete using either first or last name, not just email address
- Threading is sometimes broken, particularly when older messages need to reconstruct entire thread
- Easier tagging workflow, especially tag when bookmarking, tag directly from suprasearch results page
- Better browsing of tags, start with preview area when selecting individual tag (using re-search popup as a model)
- Some search terms are strange: e.g. on suprasecure.com “dell lcd” different than “lcd dell”
- Better key bindings
- ESC also closes CTRL-F find window
- Print
- Import/export

Project Management

We are very new to this and welcome suggestions and contributions of every variety. If you have a mini-proposal related to any part of the product, whether it's a simple bug fix or an idea for something you would like to see done, please send an email. You can send email to bizdev@suprasecure.com for business development inquiries or developer@suprasecure.com for development ideas and concerns. You can subscribe to the developer mailing list by sending an email to developer-subscribe@suprasecure.com which will give you a feel for the type of conversations we are having.

The source code is currently hosted in Subversion, and we have been considering moving to a more distributed source code management system. However, svn is fairly ubiquitous with good tool support on all of our target platforms and in Eclipse, so it would be good to have similar support from another system (git?) If you can make us feel comfortable about any given DSCM, it would be much

appreciated.

Investment

We are currently seeking investment to further development. Our business model is to certify hosting companies and charge a small percentage of monthly fees that service providers charge for SS Certified Hosting. We will build on additional modules that can bring in additional revenue, and an API that will allow integration with other applications. Please send an email to investment@suprasure.com to inquire about investment opportunities.