

Dr. Dobb's Life 2.0

Philip Linden headlines developers' conference

by SurfDaddy Orca



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Dobbs Fredriksson and John Zhaoying

Dr. Dobb's Life 2.0
Themes

Scripting
Open Source
Innovative Builds in SL
Disruptive Technologies
SL Connectivity to 2D Web
Creativity
Tools
Development
Social Issues
The Future of SL

This is the first in a series of articles on the recent Dr. Dobb's Life 2.0 Summit held inside Second Life (SL) April 28th through May 4th, 2007.

DR DOBBS ISLAND —With a blue expanse of ocean in the background and comfortable stadium seating in the foreground, SL programmer extraordinaire Aimee Weber (a developer of the NOAA sim) led an impromptu dance session. No, this wasn't just another SL club. The crowd of avatars at Dr. Dobb's Life 2.0 Conference at Dr. Dobb's Island were awaiting the arrival of a very special Linden: Philip (Rosedale) Linden, creator and CEO of Linden Lab.



Philip Linden

The dancing stopped and avatars took their seats as the audience adjusted their audio streams and opened their text chat history windows for later questions and answers. Although Dr. Dobb's Island could only accommodate about 40 lucky avatars (the present server limits on concurrent streams) selected through a lottery, thousands were able to listen to Philip speak through a special web site.

Philip took the podium and started to riff on his vision for SL. This wasn't the typical vision statement of a corporate CEO. In a recent article in *Rolling Stone* magazine, Philip compared the god-like abilities of experienced developers

in SL to the Greek Pantheon: "I like the idea of being a young Apollo." Apollo was the prophetic deity of the Greek Delphic Oracle.

Like Apollo, Philip gave the audience a glimpse into the vapors of the Delphic Pythia. He predicts virtual worlds will be as "ubiquitous" as the present-day 2D Web, "It's bigger than what the press says today."

But, let's come back to Philip's vision a little later on. Why was his appearance at Dr. Dobb's Island such a big deal?

For those of you not familiar with Dr. Dobb's, "he" isn't your run-of-the-mill physician pressing a cold stethoscope to your chest, asking you to stick out your tongue and say "ah...". In fact, Dr. Dobb's is not at person at all, and the Dr. Dobb's Journal (DDJ) magazine has nothing to do with medicine. Since roughly the advent of the Apple II circa 1976 (the famous Woz-Jobs computer that first connected keyboard, CPU, and video display), DDJ has led the computer press in covering software development languages, platforms, and tools.

The distinguished crew at Dr. Dobb's Island in Second Life includes avatars Dobbs Fredriksson (DDJ's Editorial Director Jonathan Erickson) and John Zhaoying (DDJ's Editor-in-Chief, John Jainschigg). Second Life avatar Rissa Maidstone (Event Coordinator) and avatar Bradford Russell (Engineering), both DDJ employees, broke new ground in the use of Second Life as conferencing and collaboration technology.

The Life 2.0 developer's conference, an SL first, covered topics ranging from scripting basics and SL physics to weapons and flight, vendors and rezzers, builder and developer tools (including Skidz Prims, Chisel, and Multi Gadget), SL-Web integration, the 3D UI, roads to ROI, creativity, and collaboration. (see "Conference Agenda"). To quote John Zhaoying, "Second Life is decid-

edly not a game. In Second Life, players own land, form social groups, conduct business, and essentially construct the entire world around them via 3D editing tools and the Linden Scripting Language (LSL)."

"Second Life is the most powerful engine yet evolved for identifying, motivating, training and perhaps ultimately employing a new, global generation of cross-disciplinary developers who use software to touch the world in new and tangible ways," says John.

DDJ is taking SL seriously indeed.

The conference lasted a (very) full seven days and included daily tours of sims representing the best of SL technology, commerce, and entertainment. (See "Conference Tours.") There were nightly events where in-world participants could discuss the day's activities and otherwise "schmooze" just as if they were at a real-life tradeshow or conference.

Imagine you are holding a small chisel in your hand. This is not an ordinary chisel that shapes stone or wood. Holding this chisel, you have the power to type commands into the SL chat window to create and link objects. These commands use "agent scripts." For example:

```
chisel seat|1|mover|rotto=0,0,90
```

This command uses a mover agent to rotate an object along the x,y,z axis. Chisel itself, a free, GNU GPL (soon to be LGPL/BSD) licensed product with help, is "a chatted metalanguage for SL building and LSL," according to DDJ's John Zhaoying. The help covers the following features:

- Creating objects
- Moving objects
- Shaping
- Linking
- Loader commands
- Importing
- Exporting
- Dialogs



Hiro Pendragon and Aimee Weber

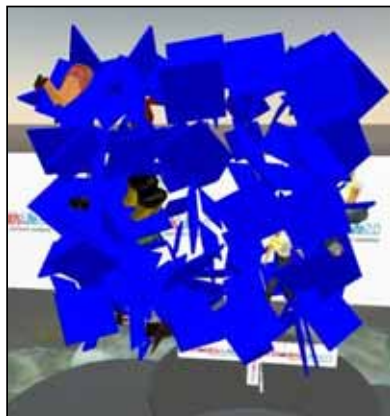
► Dobbs

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Vyrnox Ming

Vyrnox Ming, the avatar of the coder who developed Chisel, is not only a master LSL scripter, but also a wonderful showman. He created several rotating prim displays using Chisel commands, and invited the audience to participate. Several avatars jumped on the rotating prims he created over the Dr. Dobb's stage.



Chisel-generated objects with avatars

At one point, he asked for a volunteer from the audience as if he were a Las Vegas hypnotist. After a minute or two of geeky silence, Sun reporter Pollywog Gardenvale said, "I'll volunteer!" The chat dialog went like this:

- Chisel v2.0: ``Chisel'' your own adventure example!
 adventure: You find yourself inside an old abandoned house, in a room that has stairs going up and down. What do you do?
 Vyrnox Ming: This will present (or should) a dialog to Pollywog.
 adventure: You find yourself in a creepy looking attic. There's a dusty old chest and a window in the room. What do you do?
 Vyrnox Ming: This is a pun on the old 'choose your own adventure' game.
 Vyrnox Ming: I seriously doubt Pollywog will survive.
 Vyrnox Ming: But we'll see!

To show the power and flexibility of Chisel, Vyrnox created an old-style text adventure game. And, no, Pollywog didn't survive.

Vyrnox is only one of the wizards who attended the Dr. Dobb's Life 2.0 conference. Others included Hiro Pendragon (of the ubiquitous Hiro's vendors), Aimee Weber, Timeless Prototype, Eddy Stryker, and Babbage Linden, otakupOpe Newmann, and Skidz Tweak, to name but a few. Future articles will cover their SL innovations in more detail.

If Philip Linden is indeed Apollo (visionary God of Light), then MitchK Linden (Mitch Kapor) and Alem Theas (Brady Gooch) are Hermes (God of Commerce) and Hephaestus (God of Technology), respectively. Both MitchK and Alem gave separate talks during the conference, and Alem participated in the panel discussion of "SL as a Platform."

In real life, MitchK is an investor and Board Chairman of Linden Lab. He was the founder of Lotus Development Corporation and the designer of Lotus 1-2-3, the "killer application" often credited with making the personal computer ubiquitous in the business world of the 1980s.

MitchK's presentation was called "Second Life and Disruptive Innovation." It was his first in-world talk. He talked about the mistaken notion that SL is "only a game" and not a serious development platform. He reminded the audience that PCs were initially called "useless toys" at MIT in 1979, that venture capitalists refused to meet to discuss building the large-scale TCP/IP network infrastructure required for the Web in 1993, and that radio over the Internet was considered ridiculous in 1995. He views the primary obstacle to SL's success as scalability—both the architecture (currently the database "falls over" if there are more than 40,000 simultaneous users) and the company. He does not view these as insurmountable.

MitchK said that SL is the "...most exciting thing I've been involved with in the past 15 years." "Virtual worlds will be as important as, and eventually merge with, the Internet," he projects.

Alem Theas (Grady Booch) is best known for developing the Unified Modeling Language (UML) with Ivar Jacobson and James Rumbaugh. He is a software methodologist and advocate of design patterns. He is an IBM Fellow and a series editor for Benjamin/Cummings. In 1995 he was inducted as a Fellow of the Association for Computing Machinery. Just this year he received the Dr. Dobb's Journal "Excellence in Programming Award" for contributions to object-oriented programming, software architecture, and modeling. He also was featured speaker at this year's BCS/IET Manchester Turing Lecture.

Alem discussed SL as a development platform and its uses for collaboration. He says that software development is "fundamentally hard." He views team structure, communication, and collaboration as essential to successful projects. Software design and coding is increasingly being done on a distributed basis among geographically remote teams that can be as far away from the U.S. as Shanghai, China and Bangalore, India.

Alem currently uses the SL platform for remote conferencing and collaboration and sees its application for "objects



Dr. Dobb's Life 2.0 attendee Seth Ock, at IBM's CODESTATION Library.

**Dr. Dobb's Life 2.0
Conference Agenda**

Day 1

"Stuff to Build"

John Zhaoying and Dobbs Fredriksson

"LSL 101"

Tina Blackflag

"Physics of Second Life"

Bradford Russell

"Object Communications"

Vyrnox Ming

"Physics of Weapons"

Timeless Prototype

"Building an Airplane"

Cubey Terra

Day 2

"Givers, Vendors, Rezzers, Browsers"

Hiro Pendragon

"Building Tools and Their Technology"

Skidz Tweak

"Developer Tools and Resources"

otakupOpe Newmann

"SL-Web Integration"

Felix Wakemann

Day 3

"Panel Discussion: SL as a Platform"

John Zhaoying, Babbage Linden,
Jeffronius Batra, Alem Theas, Eddy Stryker

Keynote Address:

"Second Life and Disruptive Innovation"

MitchK Linden (Mitch Kapor)

Day 4

"The 3D UI"

John Zhaoying, Kiwini Oe, Aimee Weber,
Dobbs Fredriksson, Hiro Pendragon

Keynote Address:

Philip Linden (Philip Rosedale)

Day 5

"Sweet Bye and Bye v. 2.0"

Jacque Quijote (Philip Mallory Jones)

Day 6

"Roads to ROI"

John Zhaoying, Tinder Binder,
Keystone Bouchard, Hackshaven Harford,
Bitt Toll, ChrisRP Mapp

"Craft and Creative Process"

Suzanne Zeluco, SZ Designs

"Collaboration in SL"

Alem Theas (Grady Booch)

Day 7

"SL and the Web"

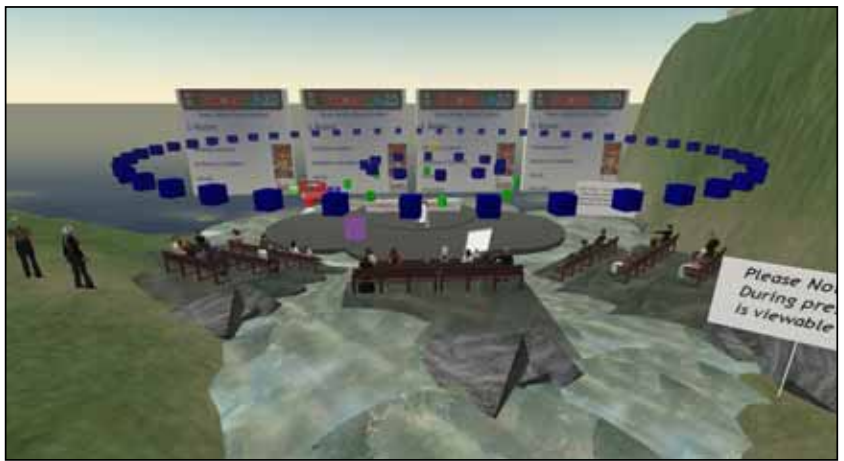
John Zhaoying, Felix Wakmann,
MikeRP Mapp, Nuke Paine

"Chisel - SL Metalanguage"

Vyrnox Ming

Final Statements:

John Zhaoying, Rissa Maidstone



Hiro Pendragon presents "Givers, Vendors, Rezzers, Browsers"

with high semantic density." "In world [SL] there is so much more that you can do than with the [2D] Web," he says, "you can put all artifacts in one space and manipulate them." This can include requirements documents, models, technical specifications, project plans, and code.

He envisions that geographically distributed teams will examine these artifacts in world (imagine sitting in a tree house at Dr. Dobb's Island with a virtual whiteboard, for example), present them, discuss changes, and make changes real time. The presentations could include voice, chat streams, text-on-a-prim, Web-on-a-prim, Integrated Development Environments (IDEs) for coding languages, and 3D models. (See "Making SL a More Complete Development Platform.")

Alem said that fundamentally beautiful virtual worlds can be used to produce "beautiful code." He is "jazzed" about the possibilities, although he sees problems to overcome in the next several months including increased security and better backup facilities.

Philip Linden, who recently fielded a question by Intel luminary and former CEO Andy Grove on hardware requirements to support scalability over the next five years (essentially faster CPUs and GPUs, and higher frame rates), is doing his best to provide a stable platform for the development of beautiful worlds. Linden Lab will need to overcome scalability problems to achieve

growth. As reported by resident Ziggy Figaro (real life blogger Mitch Wagner of InformationWeek), the service "is prone to slowdowns—which residents call "lagginess"—outages, and a plethora of other bugs."

Philip said during his keynote that the database servers are the current bottleneck to growth. The simulator architecture is "highly scalable" with simulators "connected only to neighbors." He said that it is "difficult for any team to scale to match that [current 10% per month growth rate]." The current database architecture involves many instances of open source database MySQL (of MySQL AB), and "any one little server can take the grid down."

Open sourcing SL is part of Linden Lab's strategy to grow by allowing other companies to run SL software on their own servers and also run "agent services, directed at avatars," Philip said. "We believe we won't be successful unless infrastructure can be provided by multiple people and companies, not just us." Avatar otakupOpe Newmann led a discussion of SLlib, the first SL open source library, on Day 2 of the Life 2.0 conference. He sees immediate applications in education and "historical reenactments" such as 1920s Harlem, New York.

Philip says that for SL to succeed as the preferred vendor for virtual worlds, that it will have to be "unbelievably open" and support Internet standard



MitchK (Mitch Kapor)
Linden Lab Chairman of the Board



Alem Theas (Brady Gooch)
IBM Fellow and Software Methodologist



"The 3D UI" panel discussion with Aimee Weber, Hiro Pendragon, Kiwini Oe, Dobbs Fredriksson, and John Zhaoying

► Dobbs

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protocols, code, and file formats. His intention is to "expose every [SL] protocol, every format." He said his goal is to create the "biggest open source community in the world."

Philip received several questions regarding the future of SL. Aimee Weber asked about a 5–10 year plan for Linden Lab: "If your dreams could come true, where would you like to see the platform go?" Philip said that he'd like to see "as many people around the world using it as possible," and that it can provide a "positive way to improve people's lives." His mission is to "get it out there as fast as we can—big as we can—as fast as we can." He said he understands the trade-offs between adding new features and adding new users (that is, scaling the platform), and that Linden Lab must "stop making modifications to the software" to allow the platform to stabilize and scale.

Both Philip and MitchK received questions about futurist Ray Kurzweil's notion of the "singularity." Ray Kurzweil is a holder of the National

Medal of Technology, and pioneer in the fields of optical character recognition, text-to-speech synthesis, speech recognition technology, and electronic keyboard instruments. He has been compared to Thomas Edison in the range and scope of his inventions.

The idea of the singularity is that the exponential growth of technology will lead to a point when the biological human brain will no longer be capable of keeping up with the rapidity of paradigm shifts without the help of machine intelligence.

Philip said "these are pretty big things to get one's brain around" and that there are those such as Bill Joy of Sun Microsystems who see inherent danger in the GNR (Genomics, Nanotechnology, Robotics) technologies of the 21st century. Philip said that he is "somewhere inbetween" Kurzweil and Joy, but that the "concept of computing power vastly growing asymptotically is unquestionably true."

Ironically, Ray Kurzweil himself said during the recent 2nd Annual Workshop on Geoethical Nanotechnology that he predicts the next paradigm shift in education will be... you guessed it... virtual worlds. ☞

Dr. Dobb's Life 2.0 Conference Tours

- ABC Island* (133, 136, 29)
- AOL Pointe* (197, 171, 26)
- BareRose :: HQ* (147, 164, 42)
- Blaze* <, Glory* (66, 118, 22)
- blogHUD*, Info Station
- Circuit City*, IBM 10 (138, 33, 23)
- Creations by Vindi Vindaloo* (78, 78, 49)
- C-Tech * @ Overdrive Island* (58, 165, 36)
- DE Designs* (91, 129, 38)
- Dell City*, Dell Island 3 (254, 168, 24)
- Dr. Dobb's Island* (74, 94, 34)
- IBM 7: Greater IBM Connection* (99, 141, 23)
- IBM 8: SOA HUB* (99, 92, 23)
- IBM CODESTATION: Labyrinth Beta*, (96, 20, 43)
- Immisfree*, sf designs (134, 48, 537)
- International Spaceflight Museum* Spaceport Alpha (120, 55, 22)
- Last Call, Dazzle Haute Couture* (61, 61, 22)
- Lotusphere*, IBM 9 (39, 63, 23)
- Made Men*, Male Skins, Shapes (98, 196, 26)
- Nantucket Yacht Club*
- NOAA Virtual Island*, Meteroa (176, 160, 26)
- Ohio University Without Boundaries* (26, 39, 24)
- ROMA (SPQR)*—The Ancient Roman (194, 27, 22)
- Sanctum Sanctorum*, home of RELIC (180, 29, 52)
- Second Life Library*, Info Island (70, 183, 33)
- Skidz Parts*, Snow Crash (127, 127, 22)
- Sony/BMG*, Media Island (108, 111, 21)
- Spaceport Alpha* (47, 82, 24)
- Sun Pavilion* (180, 164, 52)
- Svarga* (11, 121, 22)
- Textures Unlimited*, Lily Pad (41, 158, 21)
- The Ivory Tower Library of Prim*, Natoma (207, 170, 25)
- The Particle Laboratory*, Teal (200, 60, 21)
- THE POND* (131, 134, 40)
- The Pencil Factory* (13, 50, 26)
- Toyota Scion City* (47, 38, 24)
- Yankee Stadium* (198, 128, 27)
- Zarta's Club Pyramid*, Thams (151, 171, 110)

Gallery

Each evening Rissa Maidstone led conference attendees on a tour of some of the best builds in Second Life. IBM, Sun Microsystems, and Lotus Software opened their impressive facilities to the group to demonstrate how they are using Second Life.

IBM Corporation

IBM may have the single largest corporate presence in SL, with as many as 4,000 resident employees. The IBM complex is a cluster of islands which are used for inworld meetings, conferences, training sessions, as well as research and development.

IBM's Codestation and library is an installation maintained by Rational Software Division. According to Dobb's John Zhaoying, "The work they've done with data visualization and other disciplines is impressive."

Sam Palmisano, CEO of IBM, was quoted in Fortune Magazine as saying, "The 3-D Internet may at first appear to be eye candy, but don't get hung up on how frivolous some of its initial uses may seem... 3-D realms such as Second Life are the next phase of the Internet's evolution and may have the same level of impact as the first Web explosion."

Sun Microsystems

Sun Microsystems was the first Fortune 500 company to hold a virtual press conference when they announced the opening of their Digital Multimedia Center on Sun Island in Second Life.

According to John Gage, Chief Researcher for Sun Microsystems, their plan is to put developer training in Second Life. "Come dressed as you will. We want a place where you can try out code and hold competitions."

One of the most interesting exhibits was Sun's Project Blackbox, a complete data center inside a standard shipping container.

Lotus Software

Lotus Software created a virtual parallel of their Lotusphere 2007 conference in Second Life, for those not able to attend the real world conference in Orlando, Florida. They are also using their facilities in Second Life for beta testing product launches. Lotus Development Corporation became Lotus Software after its acquisition by IBM. Mitch Kapor, one of the founders of Lotus, is Chairman of Linden Lab. ☼



IBM's Service Oriented Architecture (SOA) Hub in Second Life.



Sun Microsystem's Project Blackbox is a complete data center built inside a standard shipping container.



Lotus Software's virtual conference facility in Second Life.