

BOINC UK
UPDATE NEWSLETTER
ISSUE 02 - JUNE 2006

bunc



Mike's Intro

Here we are with issue 2 of the **bunc** newsletter, and we are extremely pleased to bring you an exclusive interview with Dr David Anderson.

I would like to thank Wedge for his time and efforts in producing such a professional newsletter. It is something to be truly proud of. A big thank you also to tigher (Ian) who has also given much of his valuable time (and put up with my constant whinging for changes!) to the production of a truly professional website. We also have him to thank for obtaining the interview with Dr David Anderson.

From its humble beginnings as SETI Classic, it is pleasing to see that more and more people are now coming across to the BOINC platform and its multitude of scientific projects. If only one major breakthrough is achieved in the next few years, be it in cancer research, climate

prediction, protein research et-cetera, it will have all been worth while.

While we as a Team do not yet partake in every project, we have a broad membership who contribute to the major ones. I hope that we continue to attract further members and continue to participate in all those causes we feel are worthwhile. It is true that we have been up to now, mainly SETI based, but it is pleasing to see that we are beginning to diversify more rapidly and contribute more resources to other projects.

I think we can also be rightly proud of our forum where we continue to provide a wide range of subjects for our members to have their say. Remember, it is your forum and the place where you can pass on information, ask for help or discuss topics which you feel may be of interest.

It is your input which makes it what it is, and the more input that goes into it, the more valuable it becomes to others.

If you feel that anybody else would be interested in this newsletter, feel free to pass it on, and if as a result of that they chose to join BOINC so much the better. Just remind them which Team to join though !

Enough of my ramblings, enjoy the newsletter and a big thank you to you all.

Mike www.boincuk.com

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In the beginning... with Dr. David Anderson

Dr. David Anderson is the chief architect behind BOINC. Without his vision and enthusiasm maybe distributed computing would not have reached the world in quite the same way as it has. It is through his foresight that we can harness the power of potentially millions of computers around the world in support of science.

David's work as a professor of Computer Science at the University of California at Berkeley was specifically distributed computing related. Like so many "distributed" efforts back then, the technology was not quite mature enough. It was not until 1995 when one of his old graduate students, David Gedye, suggested that SETI@home might be a practical thing to do. Going beyond SETI@home, as a more generalised concept extended to other potential science projects, enthused both the Davids but again it failed to materialise as anything more than theory. It was, however, the point at which BOINC was born conceptually. With the prospect of hundreds of millions of PC owners connecting to the Internet in years to come David was convinced of his ideas.

After a false development start that was driven primarily by commercial possibilities, the notion of volunteer-based distributed computing power was shelved again. David was unhappy to see profit being the main driver and incentive for success in this field.

From conception to birth

January 2002 saw the real beginnings of BOINC coming to life. Two science projects, which became ClimatePrediction.net and Folding@home, were keen on David's concept and saw the potential. Encouraged, David applied for and won funding from the National Science Foundation (NSF) in September 2002. David's ambition for an open source distributed computing solution, driven by volunteer computing and helping solve computationally demanding scientific problems was about to be delivered. In an environment free of central control, BOINC has been, and continues to be, delivered within strict standards. Its popularity grows as more and more projects and volunteers find it and get hooked by its utility value.

"I think our current success is just the tip of the iceberg. We want to increase participation to tens of millions of people, and hundreds or thousands of science projects."

Dr. David Anderson

Exciting developments ahead

Funding can often be a major problem for developments like BOINC. The onward development of BOINC is secure in the immediate future because of follow up funds from the NSF. David is hopeful NSF funding will continue for some time to come, enabling further developments such as those below to be undertaken in the next 12 to 24 months.

David explains some of the expected developments; "Our most important goal is to stabilise the software, to make it 100% reliable, and to make it easier to install and use on all platforms. Of course, this conflicts with the goal of adding new features. But we do have some major development plans such as:

- * finishing our support for account management systems like [GridRepublic](#);
- * a new simplified user interface in the BOINC manager;
- * a sandboxing scheme where applications (even malicious ones) can do only limited damage;
- * compression of files on disk and on the network;
- * integration of BOINC with BitTorrent or similar mechanism for distributing common files efficiently;
- * making it easy for organizations (like BBC) to develop 'private-label' versions of BOINC with their own graphical identity and branding. 'This is important to create new publicity and distribution channels'.

The support the project gets from volunteers unceasingly impresses David. He is very upbeat about how people join in to help. He quotes the 'translations, alpha testing, Wiki development, helpers on the forums and stats sites' all as examples of the efforts that have 'constantly amazed' him. His only fear is that any unreliability will scare people away from Distributed Computing projects. His constant challenge is how to make the best use of the enthusiastic support from all the developers and volunteers.

BOINC Links

1. Official BOINC

<http://boinc.berkeley.edu/>

2. Dr. David Anderson's Web Page

<http://setiweb.ssl.berkeley.edu/~davea/>

3. BOINC Rankings

Rankings of interest; see how you're doing against the rest of the world:

<http://boinc.netsoft-online.com/rankings.php>

4. BOINC Account Manager

From those clever people at BOINC Stats:

www.boincstats.com/bam/

5. DC Vault

See the rankings for all Distributed Computing teams etc.

www.dc-vault.com/

Team Lookers DC Vault Rank:

www.dc-vault.com/showteam.php?team=370

Why bunc?

bunc might be an acronym for BOINC UK Newsletter Circular, but mostly, it's a play on the 'BOINC' acronym, and a reference to 'bunk' or 'bunkum' which means "nonsense and empty chatter".

You can submit news, views and articles for the **bunc** newsletter to Wedgekin@gmail.com

Exciting developments ahead

Naturally there have been high and low points within the BOINC project, David has some recollections about both. "There have been too many high points to remember them all. Maybe the biggest was when I saw SETI@home and Climateprediction.net graphics running at the same time on my laptop. This modest achievement was the result of an unbelievable amount of work. Low points? I have constant fear and anxiety that bugs or bad design in BOINC will cause people to waste time and get frustrated and angry, and that it may turn them off forever to volunteer computing. This has happened a lot, though things are getting better." It is clear to see how much he values reliability and hence its position in the developments over the next year or so. Again with the army of testers now gathered around both the BOINC project and the science projects this reduces David's fears substantially.

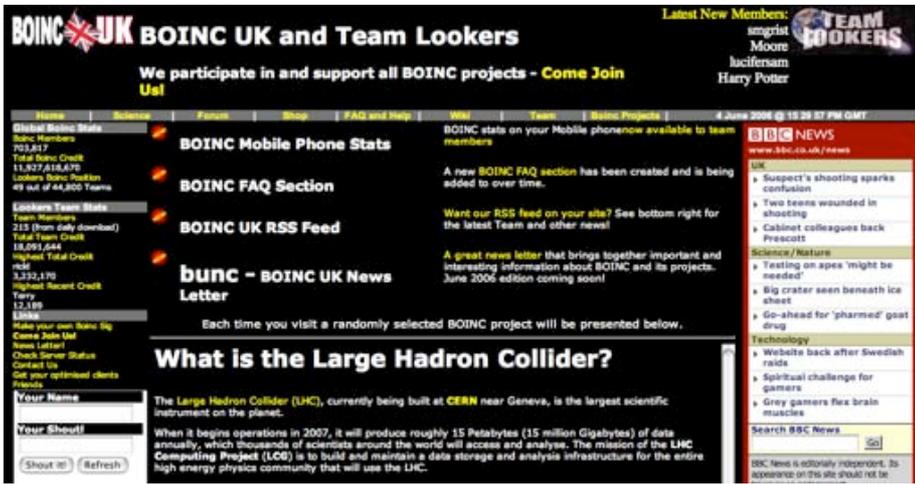
David's time is committed to BOINC right now but he still has real interests in education; "I hope to work on something else important after BOINC, before my brain decays too much more. I'm interested in education and learning, and how computers might improve the process."

BOINC logo

David calls on all volunteers to keep up the good work on behalf of science. It is also fair to say he seeks a graphics designer volunteer to redesign the BOINC logo, as the current logo has served its purpose and it's time to move on. So if you feel up to the challenge then contact BOINC!

Profile: David Anderson

- Age or age range: 50
- Favourite BOINC Science Project: Climateprediction.net
- Favourite Band: Quicksilver Messenger Service
- Favourite tippie (that's drink by the way...British slang perhaps?):
India Pale Ale (there are many excellent brands here in California)
- What you planned to be when aged 10:
Some kind of engineer, possibly involving planes, boats, and submarines.
- Your car make / model: "Piaggio LT150 scooter"
- Your dream car: I dream of not needing a car
- Hobbies: Rock climbing, hiking, classical piano
- Website: <http://setiweb.ssl.berkeley.edu/~davea/>
- Dislikes: SUVs and shopping malls
- Likes: Being outdoors and far from civilization, preferably on a mountain
- You are allowed three things on a desert island:
My laptop, a piano, and my wife Erica



www.boincuk.com - Our Website

By Ian, our webmaster

When I joined SETIUK I have to say I thought the web site needed a face lift. Being the way I am, I jotted down a few ideas and prototyped them and shared them with Mike. I was lucky to find a previous Lookers team site with some nice ideas and styles so I capitalised on that.

All along I have been trying to build something that is a little bit alive rather than just static. Also I believe websites should be 'information rich' so you feel you want to book mark it after you have been to it. With those two goals in mind I built the site as we have it today. Several weeks effort but I think it looks good enough. Certainly the feedback has been positive.

The dynamic part is the BBC content, our RSS / XML feed (which I use to link to project forums), the shout box and the random presentation of project basics upon entering the the home page. The aim was to never see the same page when you visit the site so even if its not fresh... it's different.

The second goal was information richness. Project information, Science information and links to useful places. It's not quite a BOINC portal but it's a small step towards easy access for BOINC info..

With those goals sorted in my mind I also wanted to bring some stats. Mike and I are investigating more advanced web hosting services so we can provide more dynamic stats for everyone. We currently process the daily XML feeds, and provide stats for mobile phone viewing.

Signatures

Gizmos always do well with these science projects and a fairly natural progression for us was to develop sigs. I've utilised some fairly standard PHP libraries and added some logic and arithmetic and so now we have a very nice web application for designing and displaying people's stats.

boincuk.com

Features of our website

1. Stats Sigs

Create your own Stats Signature for your website, or for within Forums.

www.boincuk.com/show3.php

Keeps you up to date with your current credits

2. BOINC FAQ

Frequently Asked Questions and useful answers you can understand!

www.boincuk.com/faq.php

If you have a Question, there is an online form for you to submit your query.

3. Mobile Phone Stats

Team members can get their statistics by surfing on their WAP or web enabled mobile phone.

www.boincuk.com/cellphoneinfo.php

4. RSS News Feeds

Get our News on your website:

www.boincuk.com/wantrss.php

5. Message Board / Forum

Join our Team on our growing Forum:

<http://forum.boincuk.com/>

My son, Sam, made some images for backgrounds and I integrated them into the sig designer. They have been quite a hit. Over 80 non-members currently use them and that's after just a fortnight of being available. It's the pictures plus the nod from Dr David Anderson that our site provides "highly configurable" signatures that makes them so attractive I think.

If you have interesting images you would like to send for a background then please do so!

In some respects the web site is also a means of promoting other things. The cell phone stats is an example of that. One thing I have been really impressed with and really wanted to promote was **bunc** itself. It's a first as a newsletter and a first class job to boot. It has great potential and the web site is a great point to either come and collect it or register for automatic distribution. We also have some other fascinating ideas coming to fruition soon and again the web site will be the distribution mechanism. This is where you make a web site work for you in my view!

I have no great plans now for the site beyond some tidying up. I think the next real development will be the stats. I hope to be part of that if possible and have it linked nicely into the web site.

The thing that makes me feel good about this is that people actually use the site and find it helpful. It's a good feeling you get from that!

By Ian, our webmaster

Introduction to BOINC

By Chris, <http://chris.kilobox.net/interests/boinc.html>

BOINC – Berkeley Open Infrastructure for Network Computing – is a platform that allows almost anyone the potentially unlimited computing power of Distributed Computing. The BOINC program does not process any of the scientific data itself, it is merely a management client that monitors multiple Project applications and the associated data with each Project.

Running BOINC in its basic form, once attached to a single Project, BOINC will download the current Project application and work allocation. BOINC will monitor the application until it completes the work, at which time BOINC will return the completed work and retrieve more. If a newer application version is available this will be downloaded automatically to ensure the scientific analysis is always using the most up-to-date version.

Get Involved

Ian will be pleased to accept news and articles for the BOINCUK website, and you may contact Ian on webmaster@boincuk.com

You can submit Newsletter articles (even short ones!) to Wedge on Wedgekin@gmail.com

BOINC is not limited to working solely on a single Project but can manage multiple Projects at the same time. On a single CPU computer only one application can be processed at any given time. BOINC enables multiple Projects to share a single CPU by using a process known as 'time-slicing', dividing the CPU time between each attached Project. BOINC will detect computers with multiple CPUs and run multiple Projects at the same time.

The BOINC GUI – Graphic User Interface – keeps the manager as simple as possible for the user. Giving enough control for the day-to-day running of BOINC. Almost every aspect of BOINC is customisable using the web-based preferences, which can be found on each of the Project sites. BOINC is set-up to utilise all available resources of a host computer whenever it is not being actively used. Preferences can be set to define set hours BOINC is active, set hours BOINC can use the internet connection, the maximum number of CPUs to use on multiple CPU computers, the maximum upload / download speeds, the total disk space to use and how often to contact the Project servers.



Using these preferences and a benchmark of the host computer's CPU, BOINC will request enough work from each Project to keep the computer working without over-running the return deadlines. On the occasions that the host computer is over-committed, BOINC will over-ride the resource share and complete the work with the earliest deadlines first.

The continuing development of BOINC means new features are being added to improve the usability of the manager. The latest versions of BOINC support the use of Account Managers, these will allow users to sign-up once to the Account Manager and select which Projects to participate in, 'cloning' their details over as many computers as the user decides, unlike the present where users must sign-up to each Project on each computer separately. Support is also available for Farm Managers, third-party programs that allow a user to monitor and control a large cluster of computers on a network. RPC – Remote Procedure Call – enables a Farm Manager to recreate all of the functions of the BOINC client.

<http://www.boincstats.com/bam/>

By Chris, <http://chris.kilobox.net/interests/boinc.html>

We need your stories for

bunc

The Newsletter for BOINC UK will grow and develop over the coming months; to have a hand in shaping our Newsletter, please email Wedgekin@gmail.com with your comments and feedback, but more importantly, please submit stories, articles, information and anything BOINC related for inclusion in the August issue of bunc.

BOINC UK and Our Projects

We may have come from SETI, and we may love SETI, but there are more Projects than you may know out there, and so perhaps you'd like to devote a proportion of your crunching time to a new project or two?

BOINC UK run several teams, all called 'Lookers' and all of them add to our overall BOINC Team Stats.

Looking at the table of Team Lookers Projects, you might find there's room for you to join more than our SETI Team.

Project & Link	Founder	Active Members
SETI@Home	Lookers	73
Einstein@Home	Chris Dodd	17
CPDN	Chris Dodd	7
LHC@Home	Chris Dodd	5
Predictor@Home	Lookers	9
SETI@Home Beta	Complicity	1
Rosetta@Home	Lookers	9
QMC@Home	Wedge	5
PrimeGRID	Shawn	1
BBC Climate		2

Project Run Down

SETI@Home - many of us were introduced to the concept of Distributed Computing by the Classic SETI Screensaver back in 1999, and we're still proud of our Classic Totals. Searching for patterns in radio signals from space – evidence of Extra Terrestrial Intelligence.

Einstein@Home - is he? Enquiring Minds want to know. Analysing gravitational wave data in the search for spinning neutron stars out in space.

CPDN – ClimatePrediction Dot Net (get it?) – forecasting needs a lot of processing power, join the largest forecasting experiment.

Predictor@Home - virtual prediction of protein molecule shapes based on their protein sequence. Understanding the shape of proteins helps all sorts of biological endeavours.

QMC@Home - Quantum Monte Carlo; hmm, maybe it should be 'Quantum Mechanics...' – nope, apparently 'the Monte Carlo Method' is a mathematical method of analysing data using random numbers and ...stuff. QMC is a Quantum Chemistry project that approximates and infers the state of molecules, rather than measuring them. Understanding the shape of molecules helps all sorts of chemical and biological endeavours.

Rosetta@Home - Virtually folds protein molecules to analyse protein interactions. Understanding protein shapes in this way has enormous implications for biology and disease.

LHC@Home - simulates particles traveling around the LHC particle accelerator to study the stability of their orbits, allowing the Large Hadron Collider to be built and giving further insights into physics. Very cool screen saver apparently, for

those of you who like that sort of thing.

SETI@Home Beta – Live testing of the next version of SETI@Home.

Orbit@Home - cool Linux based project, monitoring the orbit of all the asteroids passing near the Earth.

SIMAP – database of calculated protein similarities that requires a lot of computational power to keep up-to-date.

Each of us should consider what we feel great about getting involved with – there are debates about the worthiness of BOINC projects; what we do know is that discoveries occur in two ways; by happenstance, and with hard work. Get involved, support another project this month.

Get involved

If you are already part of the team, then spread the word about bunc & www.boincuk.com

Get BOINC

<http://boinc.berkeley.edu/download.php>

Get a Project

<http://boinc.berkeley.edu>

Join Team 'Lookers'

Once attached to a Project, use the Project's own website and search for our team, 'Lookers' and then use the link to join.

Spread the word

About BOINC UK - www.boincuk.com

BOINC UK, the website of Team 'Lookers' provides statistics, news, articles and this Newsletter for everyone and anyone; we also offer great 'Stat Signatures'. We have a developing Message Board for members to get to know each other and exchange hints and tips.

About bunc

bunc is an electronic newsletter provided for free from BOINC UK Team Lookers, and covers anything of interest regarding BOINC and the BOINC Projects.

bunc is distributed by email, and available from the BOINC UK website; sign up to the Newsletter mailing list to be sent this PDF.

bunc is published six times a year; **bunc** accepts information and articles from anyone and any team, submit articles or news ideas to Wedgekin@gmail.com

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The logo for 'bunc' is written in a bold, lowercase, yellow sans-serif font, oriented vertically.

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