



分散式運算基本觀念與 BOINC 簡介

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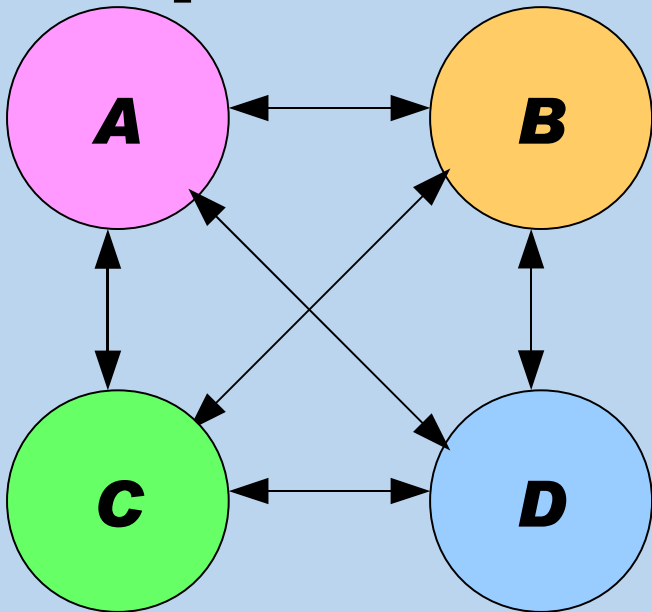


Powered by DRBL

Different Type of Multiple Users Scenario (1)

Peer

Dispatch Data



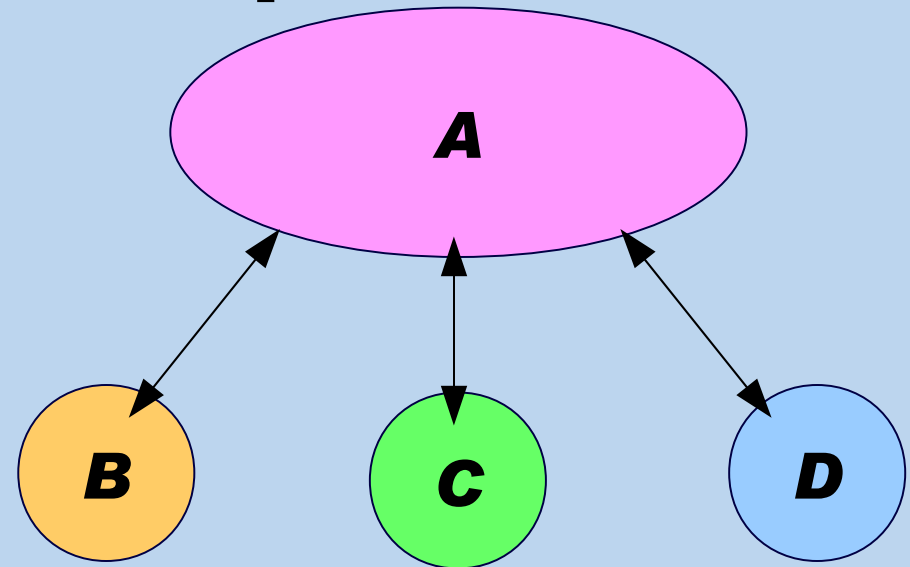
Peer

Receive Data

TCPIIP Peer-to-Peer

Server

Dispatch Data



Client

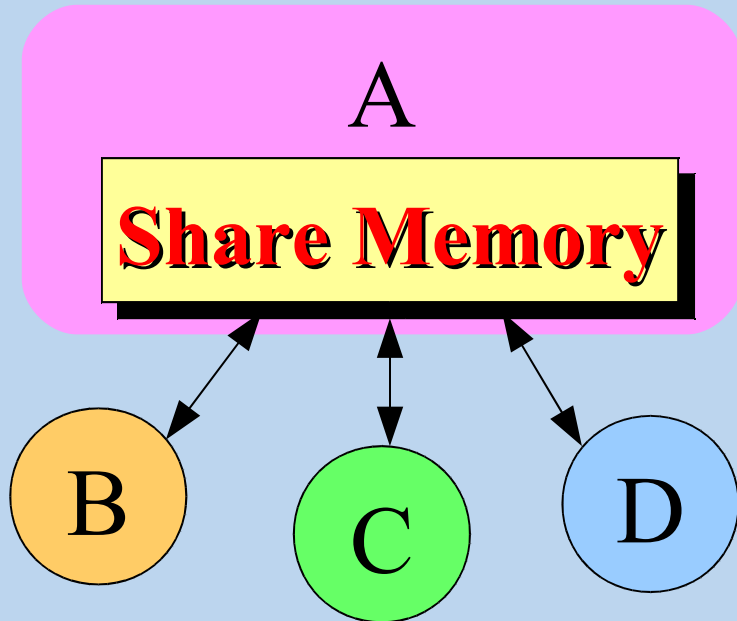
Receive Data

TCPIIP Client-Server

Different Type of Multiple Users Scenario (2)

Broker

Store Shared Data

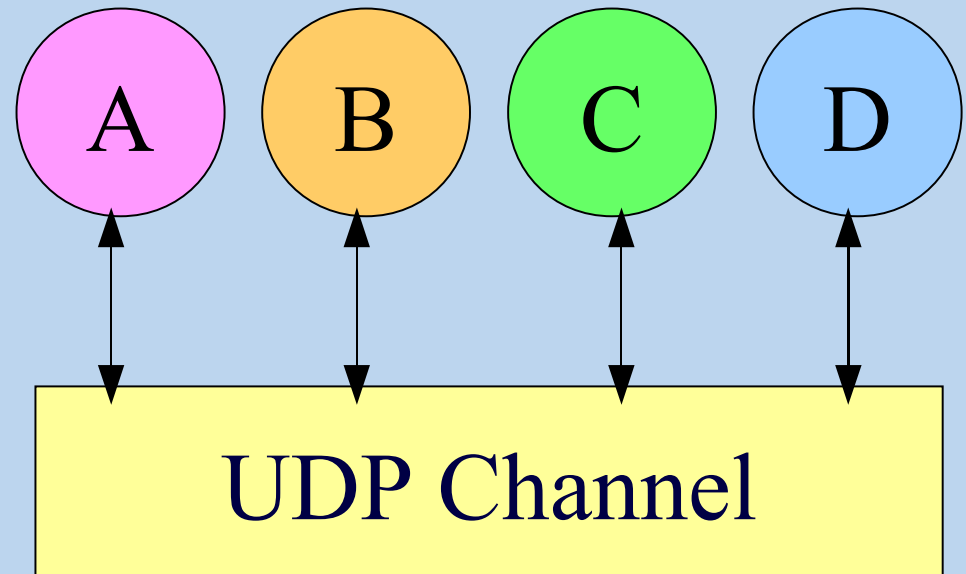


Peer

**Dispatch Data
Receive Data**

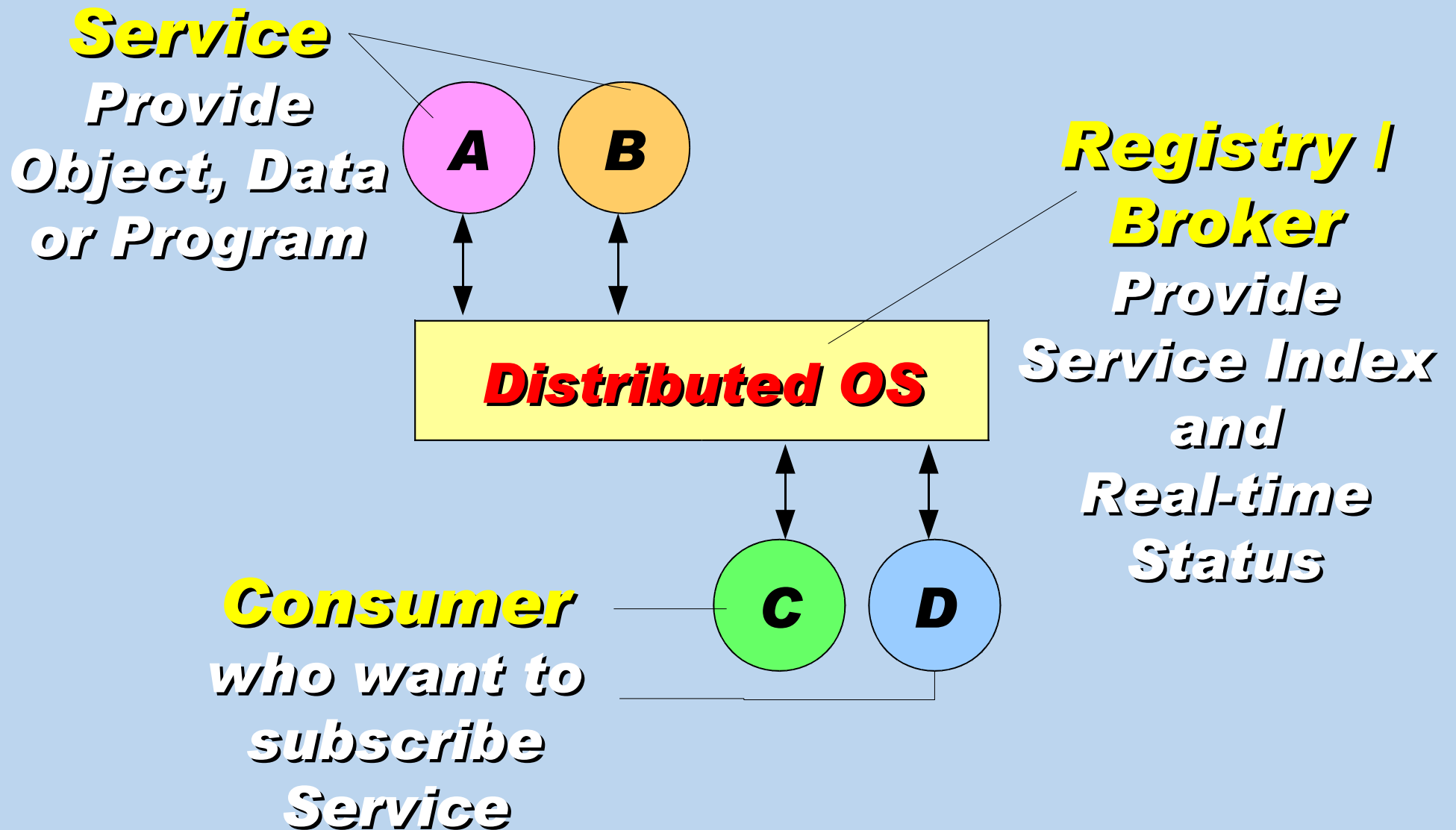
Peer

**Dispatch Data
Receive Data**

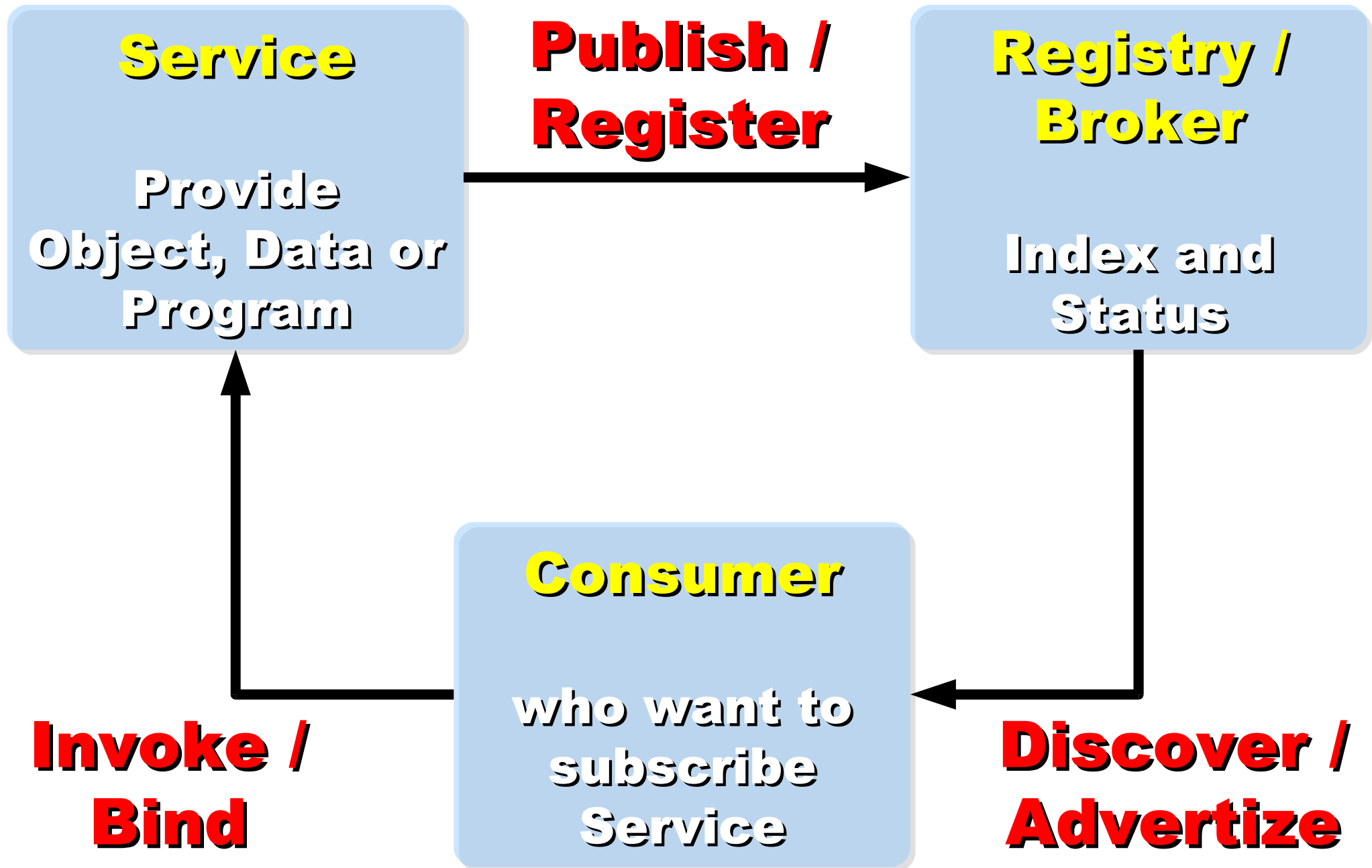


UDP Multicast / Broadcast

3 Roles of Distributed Computing



3 Basic Actions between 3 Roles



Well-Known *Distributed Object Technology* and *Web Service*

CORBA

<http://www.corba.org/>

Java RMI

<http://java.sun.com/javase/technologies/core/basic/rmi/>

DCOM

<http://msdn.microsoft.com/en-us/library/ms809311.aspx>

HLA | IEEE 1516

http://en.wikipedia.org/wiki/IEEE_1516

UDDI

<http://en.wikipedia.org/wiki/UDDI>

BOINC ??

Building distributed applications with BOINC

IDLE CYCLES



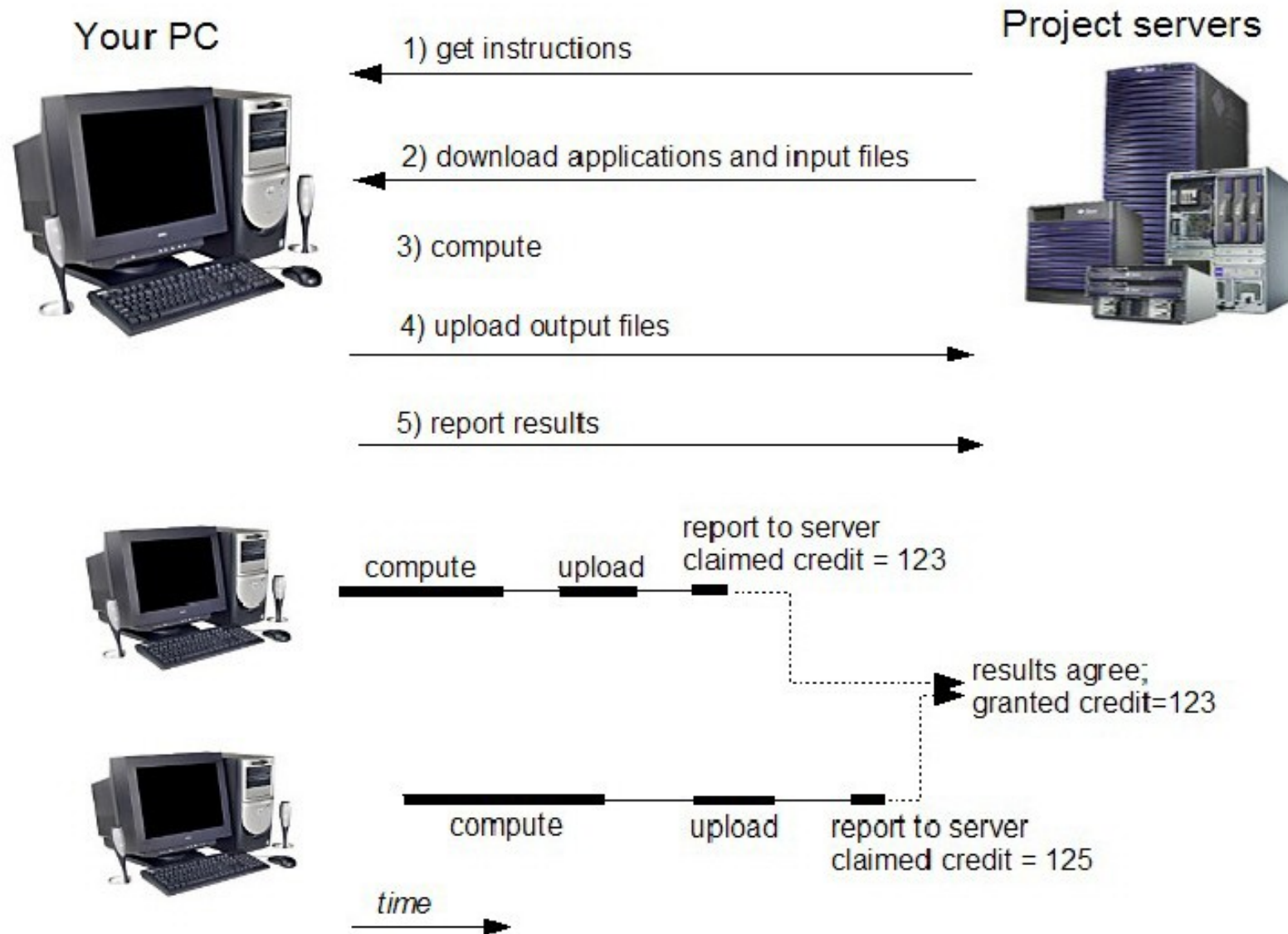
Source: Linux Magazine Issue 71 October 2006
<http://www.linux-magazine.com>

Brief Introduction of BOINC

- **Berkeley Open Infrastructure for Network Computing**
- <http://boinc.berkeley.edu>
- **Started in February 2002**
- **The most well-known BOINC-based project, SETI@home, started 2004/06**
- **BOINC also had been used in following projects:**



How BOINC works ?



GIVE ME YOUR HAND

***RISE YOUR
HAND***

***WHILE YOU
NEED A HAND***



IT'S THE BEST WAY TO LEARN

首先介紹一下 WorldCommunityGrid

The screenshot shows the homepage of World Community Grid. At the top, there is a navigation menu with links for HOME, ABOUT US, RESEARCH, FORUMS, STATISTICS, MY GRID, and HELP. A language selection dropdown is set to English. Below the navigation is a large banner with the text "You can help change the world" and a sub-header "Join World Community Grid today to contribute to projects that benefit humanity".

On the left side, there are three main sections:

- Who We Are:** Includes a photo of a group of people and a list of links: Members, Partners, Advisory Board, and News & Media. The text describes the mission: "World Community Grid's mission is to create the largest public computing grid benefiting humanity. Our work is built on the belief that technological innovation combined with visionary scientific research and large-scale volunteerism can change our world for the better. Our success depends on individuals - like you - collectively contributing their unused computer time to this not-for-profit endeavor."
- How You Can Help:** Includes a photo of hands holding a globe and a list of links: Become a Member, Become a Partner, Submit a Proposal, Find a Team, Tell a Friend, and Marketing Toolkit. The text says: "Donate the time your computer is turned on, but is idle, to projects that benefit humanity! We provide the secure software that does it all for free, and you become part of a community that is helping to change the world. Once you install the software, you will be participating in World Community Grid. No other action must be taken; it's that simple! To learn more and join, click the button below." A "download now" button is visible.
- What We Do:** States "Exciting work is now under way on projects that hold tremendous potential to benefit humanity." and lists links: Nutritious Rice for the World, Help Conquer Cancer, AfricanClimate@Home, and Discovering Dengue Drugs - Together.

On the right side, there are two call-to-action boxes:

- SUBMIT RESEARCH:** "World Community Grid's Advisory Board is looking for new research projects that can benefit from grid technology and have a positive impact on humanity." Includes a "learn more" button.
- BECOME A MEMBER:** "The power to change starts here. Join World Community Grid today!" Includes a "join now" button.

At the bottom right, there is a logo for "KIDS WANT TO KNOW THE GRID" and a section titled "What is it? Click to find out at TryScience.org" with a "try science ... home" logo. Below this is a "POWERED BY IBM" logo.

The browser's address bar shows "http://www.worldcommunitygrid.org/index.jsp?language=en_US". The status bar at the bottom left of the browser window shows the Chinese characters "完成".

有一些跟生物資訊及藥物設計有關的計畫

The screenshot shows a web browser window with the address bar displaying http://www.worldcommunitygrid.org/projects_showcase/dddt/viewDddtMain.do. The page header includes the World Community Grid logo and navigation tabs: HOME, ABOUT US, RESEARCH, FORUMS, STATISTICS, MY GRID, and a language selection dropdown. A user is logged in as 'jazzwang' with 63,929 accumulated points and a current ranking of 127,305.

The main content area features a large banner for the 'Discovering Dengue Drugs - Together' project, with a sub-header 'RESEARCH' and a 'SUBMIT RESEARCH' button. The project description includes:

- Project Status and Findings:** Information about this project is provided on the web pages below and by the project scientists on the [Discovering Dengue Drugs - Together website](#). For the latest status report, please go to the [Discovering Dengue Drugs - Together status report](#). If you have comments or questions about this project, please visit the [Discovering Dengue Drugs - Together forum](#).
- Mission:** The mission of Discovering Dengue Drugs - Together is to identify promising drug leads to combat the related dengue, hepatitis C, West Nile, and Yellow fever viruses. The extensive computing power of World Community Grid will be used to complete the structure-based drug discovery calculations required to identify these leads.
- Significance:** This project will discover promising drug leads that stop the replication of viruses within the Flaviviridae family. Members of this family, including dengue, hepatitis C, West Nile, and Yellow fever viruses, pose significant health threats throughout the developed and developing world. More than 40% of the world's population is at risk for infection by dengue virus. Annually, 1.5 million people are treated for dengue.

On the left sidebar, there are sections for 'Active Research' (including Nutritious Rice for the World, Help Conquer Cancer, AfricanClimate@Home, and Discovering Dengue Drugs - Together) and 'Inactive Research' (including Help Cure Muscular Dystrophy). A 'Completed Research' section is also visible at the bottom.

On the right sidebar, there is a 'SUBMIT RESEARCH' section with a 'learn more' button and a 'Visit the Forums' section with a 'tell your friends' button.

The browser's status bar at the bottom left shows the text '完成' (Complete).

開始實作前，請先加入會員

World Community Grid - Home - Mozilla Firefox

http://www.worldcommunitygrid.org/index.jsp?language=en_US

worldcommunitygrid

member name: jazzwang password: ***** sign in

> forgot member name? > forgot password? remember me:

HOME ABOUT US RESEARCH FORUMS STATISTICS MY GRID Select Language HELP

You can help change the world
Join World Community Grid today to contribute to projects that benefit humanity

Who We Are

World Community Grid's mission is to create the largest public computing grid benefiting humanity. Our work is built on the belief that technological innovation combined with visionary scientific research and large-scale volunteerism can change our world for the better. Our success depends on individuals - like you - collectively contributing their unused computer time to this not-for-profit endeavor.

- > [Members](#)
- > [Partners](#)
- > [Advisory Board](#)
- > [News & Media](#)

How You Can Help

Donate the time your computer is turned on, but is idle, to projects that benefit humanity! We provide the secure software that does it all for free, and you become part of a community that is helping to change the world. Once you install the software, you will be participating in World Community Grid. No other action must be taken; it's that simple! To learn more and join, click the button below.

[download now](#)

- > [Become a Member](#)
- > [Become a Partner](#)
- > [Submit a Proposal](#)
- > [Find a Team](#)
- > [Tell a Friend](#)
- > [Marketing Toolkit](#)

What We Do

Exciting work is now under way on projects that hold tremendous potential to benefit humanity.

- > [Nutritious Rice for the World](#)
- > [Help Conquer Cancer](#)
- > [AfricanClimate@Home](#)
- > [Discovering Dengue Drugs - Together](#)

What's New

World Community Grid would like to spotlight the following 5 teams for contributing the most run time (y:d:h:m:s) yesterday:

> 1. Team 2ch	12:178:10:07:54
> 2. Easynews	10:290:18:49:54
> 3. XtremeSystems	4:285:10:05:01
> 4. IBM	2:124:15:32:50

SUBMIT RESEARCH

World Community Grid's Advisory Board is looking for research projects that can benefit humanity through technology. Submit your proposal today!

BECOME A MEMBER

The power to change starts here. Join World Community Grid today!

[join now](#)

KIDS WANT TO KNOW THE GRID

What is it? Click to find out at [TryScience.org](#)

tryscience ... home

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點選『成為成員』

完成

填寫欲申請之帳號資料

World Community Grid - Register - Mozilla Firefox

http://www.worldcommunitygrid.org/reg/viewRegister.do

worldcommunitygrid

member name: password: [sign in](#)

[forgot member name?](#) [forgot password?](#) remember me:

HOME ABOUT US RESEARCH FORUMS STATISTICS MY GRID Select Language HELP

Register Select Projects Download Explore

- Create Member Name
- License Agreement
- Select Projects
- Download software
- Install software
- Explore World Community Grid

It's free and [secure](#)! To start, just fill out the form below, and click "continue."

*Member Name: [Is this name available?](#)

*Enter a Password: **Password is valid**

*Retype your Password: **Passwords match**

*E-mail Address: **E-mail Address is valid**

*Confirm E-mail Address: **E-mail Addresses match**

Information: World Community Grid may occasionally send out information and/or updates via email. Please uncheck the box if you do not want to receive information updates from World Community Grid.

End User Software License Agreement

* Similar to other software downloads, World Community Grid software requires that you accept an end user license agreement. Please read the [Software License Agreement](#), and check the box to acknowledge that you accept the agreement.

(Fields marked with a * are required)

[continue](#)

Already Registered?
Do you want to download the software again? [Click here](#) to visit the Download page.

Visit the Forums
If you need technical assistance beyond what's available in [Help](#), please [visit the forums](#) to post your questions and get answers on how others are using World Community Grid.

Related Resources
[Software Overview](#)
[System Requirements](#)
[Points System](#)
[Member Policy](#)

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完成

勾選欲參與之大型分散式運算專案

World Community Grid - Select Projects - Mozilla Firefox

https://secure.worldcommunitygrid.org/reg/ms/viewRegProjectSelect.do?language=en_US

Welcome back, jazzbear [sign out](#)

Accumulated Points: 0
Current Ranking: 0

HOME ABOUT US RESEARCH FORUMS STATISTICS MY GRID Select Language HELP

Register Select Projects Download Explore

成員名: jazzbear - 选择项目 - 下载软件 - 浏览 World Community Grid
- 安装软件

Check the box(es) for the project(s) to which you want to contribute your spare computing time. Click continue when you are finished. Don't worry, you can make different selections later if you change your mind.

Available Projects

- Participate in All Projects
- [AfricanClimate@Home](#)
 - Please review the [system requirements](#) before opting to participate in this project
- [Discovering Dengue Drugs - Together](#)
- [FightAIDS@Home](#)
- [Help Conquer Cancer](#)
- [Human Proteome Folding 2](#)
- [Nutritious Rice for the World](#)

Please note: Some projects may occasionally have periods where no work is available. If you choose to receive work for only one project, the project may, at times, not have work units available for download. For this reason, we recommend that you select more than one project.

[continue](#)

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完成 secure.worldcommunitygrid.org

如果你有其他閒置的機器，可下載軟體

The screenshot shows a Mozilla Firefox browser window with the URL <https://secure.worldcommunitygrid.org/reg/ms/viewDownload.do#>. The page header includes the World Community Grid logo and navigation links: HOME, ABOUT US, RESEARCH, FORUMS, STATISTICS, MY GRID, and a language selection dropdown. A user is logged in as 'jazzbear' with 0 accumulated points and a current ranking of 0.

The main content area features a progress bar with four steps: Register, Select Projects, Download, and Explore. The 'Download' step is currently active. Below the progress bar, the text states: "The World Community Grid software will be downloaded for:"

Three operating system options are listed:

- Windows® (5.10.45)** (Vista, XP, Me, 2000, 98) - This option is selected with a radio button.
- Linux (5.10.45) (x86)** - This option is highlighted with an orange background.
- (Apple) Mac (5.10.45)** (PowerPC, x86) - This option is not selected.

Below the operating system options, there is a link: "If you'd like to download the software for a different operating system, [click here](#)."

On the right side of the page, there is a "Visit the Forums" section with a brief introduction and a "Related Resources" section with links to "Software Overview", "System Requirements", "Points System", and "Member Policy". At the bottom right, there is a "POWERED BY IBM" logo.

At the bottom of the browser window, a Windows dialog box titled "Opening wcg_boinc_5.8.15_windows_intelx86.exe" is visible, showing the file name and its source: <http://boincd.ssl.berkeley.edu>. The taskbar at the bottom shows the system tray with the text "完成" (Complete) and the URL secure.worldcommunitygrid.org.

等一下的實作會用到 BOINC 認證金鑰

The screenshot shows the 'My Profile' page on the World Community Grid website. The browser title is 'World Community Grid - My Profile - Mozilla Firefox' and the URL is 'https://secure.worldcommunitygrid.org/ms/viewMyProfile.do'. The page header includes the logo and navigation menu. A callout bubble points to the 'MY GRID' menu item with the text '1. 點選『MyGrid』'. Another callout bubble points to the 'My Profile' link in the left sidebar with the text '2. 點選『My Profile』'. The main content area shows a form for profile management with fields for Name (jazzbear), E-mail Address (jazz@nchc.org.tw), and Country (SELECT). A verification code is also displayed.

World Community Grid - My Profile - Mozilla Firefox
https://secure.worldcommunitygrid.org/ms/viewMyProfile.do

Welcome back, jazzbear [sign out](#)
Accumulated Points: 0
Current Ranking: 0

HOME ABOUT US RESEARCH FORUMS STATISTICS **MY GRID** Select Language [HELP](#)

Download Software
Do you want to download the software again? [Click here](#) to visit the Download page.

Visit the Forums
If you need technical assistance beyond what's available in [Help](#), please [visit the forums](#) to post your questions and get answers on how others are using World Community Grid.

Tell A Friend
Help accelerate humanitarian research even further by [telling your friends](#) about World Community Grid.

Related Resources
[System Requirements](#)
[Points System](#)

My Statistics
My Profile
My Projects
Sign Out

My Profile

You provide your information by clicking the "Save" button. To change information, enter your change and click the "Save" button.

Name: [Is this name available?](#)
Note: Please choose something other than your real name. Also, World Community Grid will reject/remove Member Names which we consider [objectionable](#) to our community.

验证码: 510222_c881884d163f6613101c0e1d3890a11f

E-mail Address:

Information: World Community Grid plans to occasionally send out information and/or updates via e-mail. Please check the box if you would like to receive information updates from World Community Grid.

Country:

完成

請留著瀏覽器畫面供待會查詢認證金鑰

World Community Grid - My Profile - Mozilla Firefox

https://secure.worldcommunitygrid.org/ms/viewMyProfile.do

World Community Grid plans to occasionally send out information and/or updates via e-mail. Please check the box if you would like to receive information updates from World Community Grid.

Country:

Note: Your country needs you! Your results, points and run time will be counted in your country's stats.

BOINC Account Key: **767622421ce494418f6d5e67aff9dd50**

BOINC Project URL: www.worldcommunitygrid.org

BOINC Account Number: 510...

BOINC Cross-Project Id: 84f...

BOINC Show Hosts:

BOINC Account Key

save

Return to Top ▲

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Help accelerate humanitarian research even further by [telling your friends](#) about World Community Grid.

Related Resources

- > [System Requirements](#)
- > [Points System](#)
- > [Member Policy](#)

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