

Tony Morelli
CPE 606
HW #10
UDP Tic Tac Toe for Nintendo DS

For this assignment, I created a network based game of Tic Tac Toe which is meant to be played on a Nintendo DS using the wifi link. Source code and binaries are included for the DS and for a PC running linux. As the Nintendo DS Wifi Libraries are still in their infancy, the DS is ALWAYS the client. It can connect to the PC running linux, or to a PSP running Net Tic Tac Toe in server mode.

The source code contains the files `main.c`, `TicTacToe.c/h`, and `TicTacToeMsgs.h`. All of the `TicTacToe*` files are meant to be used on all target platforms untouched. This is all of the TicTacToe logic and shows how easily games can be ported for different targets. Most of the code in `main.c` is specific for the linux machine or for the DS (although I could make this even more common between games). `TicTacToe.c/h` contains logic specific to the TicTacToe game (mainly evaluating the board to see if there is a win). `TicTacToeMsgs.h` contains defines for message types being passed between the client and the server.

The client and server communicate using UDP. With UDP, packets are not guaranteed to reach their destination. Therefore good coding would have some sort of ACK so the sender knows the packet reached its destination. Unfortunately this code does not do that. In all my testing I never dropped a packet, but I know it will happen from time to time. When that happens, the games will be out of synch and the only way to fix it is to restart both applications. If you are about to lose a game of TicTacToe, I would highly suggest powering off your wireless router as the game will have to be restarted. Also, the client and server connect wirelessly through *infrastructure* mode. That is they connect to each other through a wireless access point. This is opposed to *ad-hoc* mode where the client and server connect directly to each other without the use of a wireless access point. The reason this approach was done was also due to limitations of the current Nintendo DS open source libraries.

The IP Address of the DS and Net Tic Tac Toe server, and Wireless Access Point Settings are currently hard coded into the DS program. This is not the best way to do things as it is not very flexible. However, making a menu to set these items should be an easy thing to do.

Once the client and server are talking to each other, the game of Tic Tac Toe is played until the players get bored. The server is always X and the client is O. The server always moves first. On the DS side, the player uses the styles to touch one of the 9 board positions to place a token. On the linux side, the user is prompted to enter a board position to place a token. The board position is a number from 1 to 9. Positions 1-3 are

the top row, left to right, 4-6 are the middle row left to right, and 6-9 are the bottom row left to right.

This relatively simple exercise had a large impact on the handheld development scene. Within hours of posting my results and code, what I had done was translated into at least 5 languages world wide!

Screen shots follow:



Nintendo World BBS: GBAMDS[PSP - PSP的诞生 - [125] 史上第一款NDS与PSP联机的游戏诞生了! - Mozilla

http://bbs.newwise.com/viewthread.php?tid=223405



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积分: 0
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UID: 560
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来自: 美国 费城



上面这位名为Rage的老外很擅长制作他的游戏或Dx Tool, 分别有PSP版和NDS版令人惊讶的是通过设定IP地址, 这个简单的程序可以用PSP和NDS来联机玩!

请先选择游戏模式。



Click here to open new window
CTRL+Mouse wheel to zoom in/out

Play Nintendo DS against a Sony PSP! (Screenshots Included) - Mozilla - 2

http://www.digg.com/gaming/Play_Nintendo_DS_against_a_Sony_PSP_(Screenshots_includ...

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1112 **Play Nintendo DS against a Sony PSP! (Screenshots Included)**
submitted by [CassCoo](#) 15 hours 53 minutes ago (via <http://www.newswise.com/forums...>)

Someone on the DSWR forum has created a homebrew app that will allow a person to play a game using a Nintendo DS against a person with a Sony PSP (or other way around). This allows 2 people to play against each other using the Wi-Fi capabilities for both handhelds! It's only the beginning... Screenshots included.

39 Comments

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to [GrenadeKerley](#) 15 hours ago + 15 diggs

This sounds like the beginning of a beautiful relationship. I love the idea. Sounds like it could really end up having some cool ideas and what have you. Homebrew cross-application gaming could be very popular with the right crowd of people.

to [he_buzzed](#) 15 hours ago + 39 diggs

DS and PSP were deeply in love and saw a bright future ahead of themselves. But tragically PSP's father the evil Sony wanted PSP to become a nun and forced her into a convent where she could only read the approved books of the church.

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[Divers] THQ Rev0, Sega, Micro Machine, DS - PSP - Mécrits

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http://dcdsds.bb-fr.com/viewtopic/forums/1-66

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[Divers] THQ Rev0, Sega, Micro Machine, DS - PSP

Auteur	Message
 profil_g inscrit le: 15 Avr 2006 Messages: 103	<p>Posté le: Lun 24 Avr à 20:46</p> <p>* THQ aurait annoncé déjà deux jeux Nickelodeon sur Rev0. "Nous allons où les enfants sont, avec pour objectif d'être les leaders." Comme ça, c'est clair.</p> <p>http://www.comptons-le.net/forums/index.php?showthread.php?p=166277&highlight=</p> <p>* Sega devrait distiller une annonce d'un nouveau jeu par jour à partir de demain, et ce jusqu'à l'E3.</p> <p>* La PSP et la DS jouent ensemble au prochain Mignon.</p> <p>http://www.wagenteufreemth.com/project/03epdfattach/</p> <p>* Déjà vu, mais maintenant dispo sur You Tube, marie for real.</p> <p>http://www.youtube.com/watch?v=yw5nd_0pA&start=http%3A%2F%2Froblo.com%2F</p> <p>* Enfin, la boîte de Micro Machine V4, développé par l'équipe originale et non celle des précédentes consoles de salon 128 bits.</p> <p>http://www.de-gamer.nl/article/0266p1.html</p>

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DS vs. PSP: Tic-tac-toe throwdown - DS Fanboy - Mozilla

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DS vs. PSP: Tic-tac-toe throwdown

Posted Apr 24th 2006 10:15AM by [Ludvik Halimov](#)

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In a complicated process which no doubt involved dark alchemy and at least one blood sacrifice, a clever member of the homebrew community has managed to get the DS and the PSP talking to each other wirelessly. The hot topic under

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DS Fanboy Bloggers (30 days)

#	Blogger	Posts	Comments
1	Ludvik Halimov	51	20
2	David Hinds	35	0
3	Ed Sheehy	2	0

DS Fanboy Contributors

#	Contributor	Stars	Comments
1	Sera	3	40

DS-x2 - PSP And Nintendo DS Gaming Together - Mozilla

ds-x2.com/index.php?id=5110

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PSP AND NINTENDO DS GAMING TOGETHER

Posted on 06-04-2006 by Dennis



Most gamers agree: fanboyism can be very annoying. The PSP has its graphical power, the DS has its touch-screen controls. But both handheld can work together though.

Cross-platform multiplayer is a term rarely seen in games. While many different devices make use of the very same technologies, applications on device X are most often not able to communicate with those running on device Y. The same with the Sony PSP and Nintendo DS.

As both handhelds are capable of communicating over Wi-Fi, why haven't we seen any games yet that can be played on both the Nintendo DS and Sony PSP against each other? While the most obvious reason may be the difference between the two handhelds in terms of computing power and control schemes, it is possible to create similar games that exchange information.

In the past, Tony M Morell developed a small TicTacToe homebrew application for the Nintendo DS. Nothing wrong with that. Now Tony had set his eye on his Sony PSP and decided to port the application to the handheld by Sony. The result: TicTacToe running on two separate devices in their own way. Controls and graphical visualization may differ between the two versions, but the essence of the game itself remained intact.

Tony decided to add Wi-Fi functionality to the two applications and managed to get the two devices to communicate with each other. The result? The very first cross-platform application running on the Nintendo DS and Sony PSP.

A few photographs of Tony Morell's application running on the two handhelds can be found [here](#).

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STRANGE BEDFELLOWS

Don't call it another volley in the portable console wars, call it a temporary truce. University of Nevada Reno student Tony Morelli has expanded on his homebrew Tic-Tac-Toe project for DS to take part in wireless multiplayer games against its rival PSP.

Its practical applications are limited, of course, by the necessary hardware and firmware requirements for both systems, but as a proof of concept it's a fascinating prospect -- we can only hope Morelli or others might pick up on it and expand the idea further.

11:22 | [Comments \(0\)](#)

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http://www.maxconsole.net/

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Here is a set of pictures from Tech Today, the new Nintendo root website, supports PS2, AAC as well as the ability to save audio from RSS channels.

[http://www.techtoday.com](#) [http://www.nintendo.com](#)

PSP vs DS - in a game of Tic Tac Toe

posted by maxlin at 02:10 pm on 2006-04-24

PSP vs DS - in a game of Tic Tac Toe

Rizon has released a clever little project which will allow your PSP to pit itself against your DS in a game of Tic Tac Toe. The IP is hard coded in the project source, you will have to launch one version of the game on your DS and one on your PSP. It's a great concept that it's pretty simple to get started with this one, select game mode, set IP of the server and get playing.



[DISCUSS IT FORUM](#) [READ NOW](#)

posted by maxlin at 10:23 am on 2006-04-24

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16 **Microsoft y sus detectives, "casi en el borde del delito provocado"**
 enviado por [falgas_alfaro](#) hace 3 horas 17 minutos
 Esta es una de las conclusiones, resultado de un juicio contra la propiedad intelectual, instruido por la Guardia Civil de Torrejón contra tres particulares. Más información en <http://www.buletrineisra.com/Tia-161>
 etiquetas: derecho, leyes, estado, hazañochi
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15 **ecologista contra balleneros... echándole huevos!**
 enviado por [alberfaria](#) hace 5 horas 1 minuto
 Ecologistas contra balleneros japoneses en la Antártida... le echan huevos y se cruzan con sus pequeñas codicias... ahora si no está nada claro que es lo q intentan al final con ese cable?¿
 etiquetas: ecologistas, balleneros
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31 **Primera aplicación que une por Wifi a la Sony PSP y Nintendo DS**
 enviado por [maigal](#) hace 5 horas 20 minutos
 Es un simple 3 en raya, pero sin duda un gran paso en la conciliación de todos los juegos portátiles.
 etiquetas: sony, psp, nintendo, ds, wifi
 2 comentarios | categoría: cacharros

3 **Almodóvar de nuevo en Cannes**
 enviado por [gagadipate](#) hace 5 horas 51 minutos
 Almodóvar, después de inaugurar el festival de Cannes con su anterior película, ahora con Volver luchará por la Palma de Oro. Sin duda el director de cine más importante de la historia en España.
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26 **Screenshots Edubuntu 6.06**

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Play a PSP Against a DS
 galaxy-labrador tagged as: dsmwif, pspwif
 MON 24 APR 2006

Flagon over at the DSMWif forum has created a homebrew application that allows a Nintendo DS to play against a Sony PSP in a game of Tic-Tac-Toe.



Hi

I just somewhat finished my first DS app. Thanks to EL_Hobito's PA_Lib Wifi Setup App, I was able to quickly code something up.

I had to do this for a school project, and I got enough done for that... The code is really messy, and all IPs are hardcoded... I am not sure when or if I'll actually finish it, but it does work.

So you can check it out, and play tic tac toe using WIFI. On my site I also posted the PSP code too, so you can play a game against someone with a psp!

The homepage for this application is here

Looks pretty interesting. Unfortunately, I do not know anyone with a DS so I couldn't test it out myself. As you can see above, Flagon admits that the code is messy and he may not even finish

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April 24, 2006

PSP vs DS - Literally!

Red under : games, ps2, ps3, Nintendo, Sony — 24:58pm © 2:45 pm



An inventive homebrew app writer has created the first online cross platform portable game: **TIC-TAC-TOE!**

Oh, so the game in question isn't exactly that exciting, but the implications of common code and compatibility for future homebrew applications are grand!

Thanks Challenge!

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Last post by: 15:41m
Ayer 11:00 AM
16 Respuestas, 318 Visitas

Pues sí!! apareció un "homebrew" que permite jugar al 3 en raya via Wifi entre otras cosas...así se puede jugar tanto contra DS como otras PSPs...
Recuerdo que para los usuarios de PSP esto solo funciona si firmamos los 1.00 o 1.20 (aun no se ha probado con el 1.50).

DESCARGAS
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- NET TIC TACTED DS

Homebrew para PSP:

- NET TIC TACTED PSP

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Apr 23, 2006 - 7:45 PM - Por el bicho

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Sección: Nintendo DS

Miércoles, 26 de Abril de 2006

DS y PSP cara a cara a través de WiFi

Leer más (Editar)



Un jugador de Nintendo DS ha creado, como un proyecto académico y en su tiempo libre, un programa que **nos permite jugar via WiFi con otros usuarios de consolas portátiles**, ya sea en una DS o una PSP.

Aunque por ahora con este programa sólo podemos ejecutar un **Tres en Raya** en modo local, las posibilidades de la simple interacción entre los dos plataformas portátiles más extendidas son infinitas, y si alguien se pone a trabajar de forma más seria en ello puede asegurar un futuro muy interesante para los usuarios de ambas consolas.

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