

# Nintendo Wi-Fi Connection for DS

Henry Cheng  
Senior Software Engineer  
Software Development Support  
Group

DEVELOPERS  
CONFERENCE

Nintendo Confidential

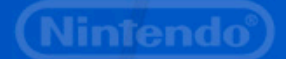


# Nintendo Wi-Fi Connection is a logo!

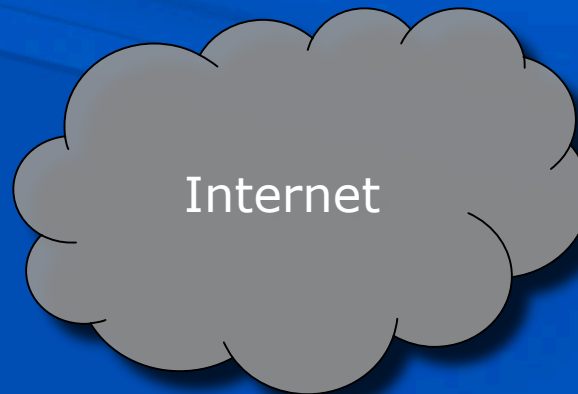


DEVELOPERS  
CONFERENCE

Nintendo Confidential



# Nintendo Wi-Fi Connection is "infrastructure"!



Authentication



Matching



Ranking



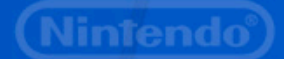
Data Storage



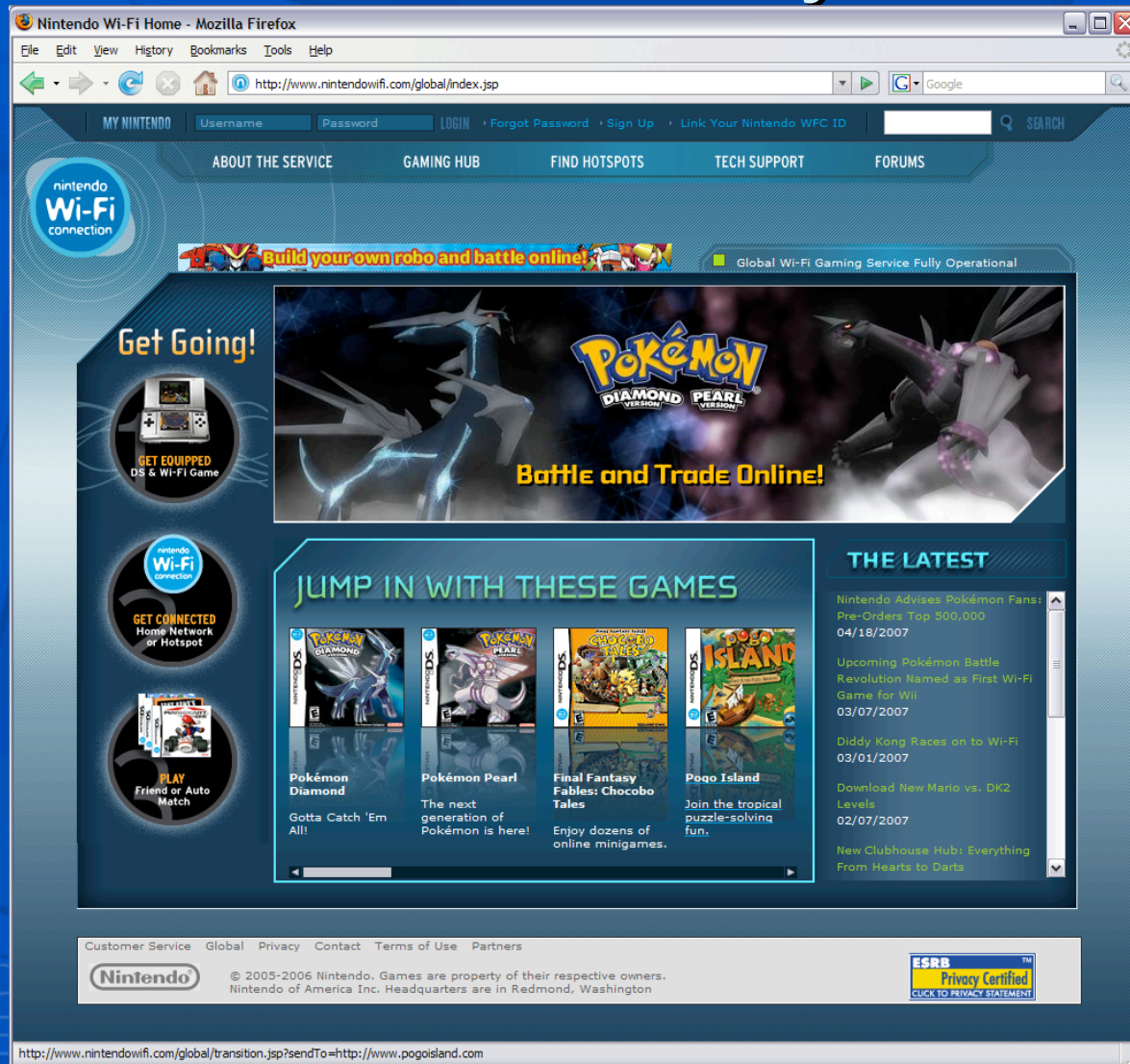
Data Download

DEVELOPERS  
CONFERENCE

Nintendo Confidential



# Nintendo Wi-Fi Connection is "community"!





# Nintendo Wi-Fi Connection is live!



[Pokémon Diamond](#)

Status – Up!



[Pokémon Pearl](#)

Status – Up!



[Custom Robo Arena](#)

Status – Up!



[Spectrobes](#)

Status – Up!



[Winning Eleven Soccer](#)

Status – Up!



[Diddy Kong Racing DS](#)

Status – Up!



[Yu-Gi-Oh GX Spirit Caller](#)

Status – Up!



[Castlevania: Portrait of Ruin](#)

Status – Up!



[Bomberman Land Touch](#)

Status – Up!



[Final Fantasy III](#)

Status – Up!



[Digimon World DS](#)

Status – Up!



[Konductra](#)

Status – Up!



[Contact](#)

Status – Up!



[Clubhouse Games](#)

Status – Up!



[Mario vs. DK2](#)

Status – Up!



[Open Season](#)

Status – Up!



[Star Fox Command](#)

Status – Up!



[Tenchu: Dark Secret](#)

Status – Up!



[LostMagic](#)

Status – Up!



[Bomberman Land Touch](#)

Status – Up!



[Tetris DS](#)

Status – Up!



[Animal Crossing: Wild World](#)

Status – Up!



[Mario Kart DS](#)

Status – Up!



[Tony Hawk](#)

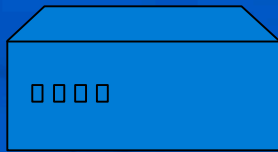
Status – Up!

DEVELOPERS  
CONFERENCE

Nintendo Confidential

Nintendo®

# Hardware



IS-NITRO-EMULATOR

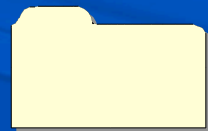


Production DS



Wi-Fi access point  
Nintendo Wi-Fi USB connector  
Internet Connection

# Software



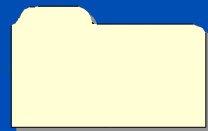
NitroDWC or



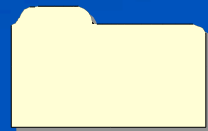
NitroDWC-DL



NitroWiFi

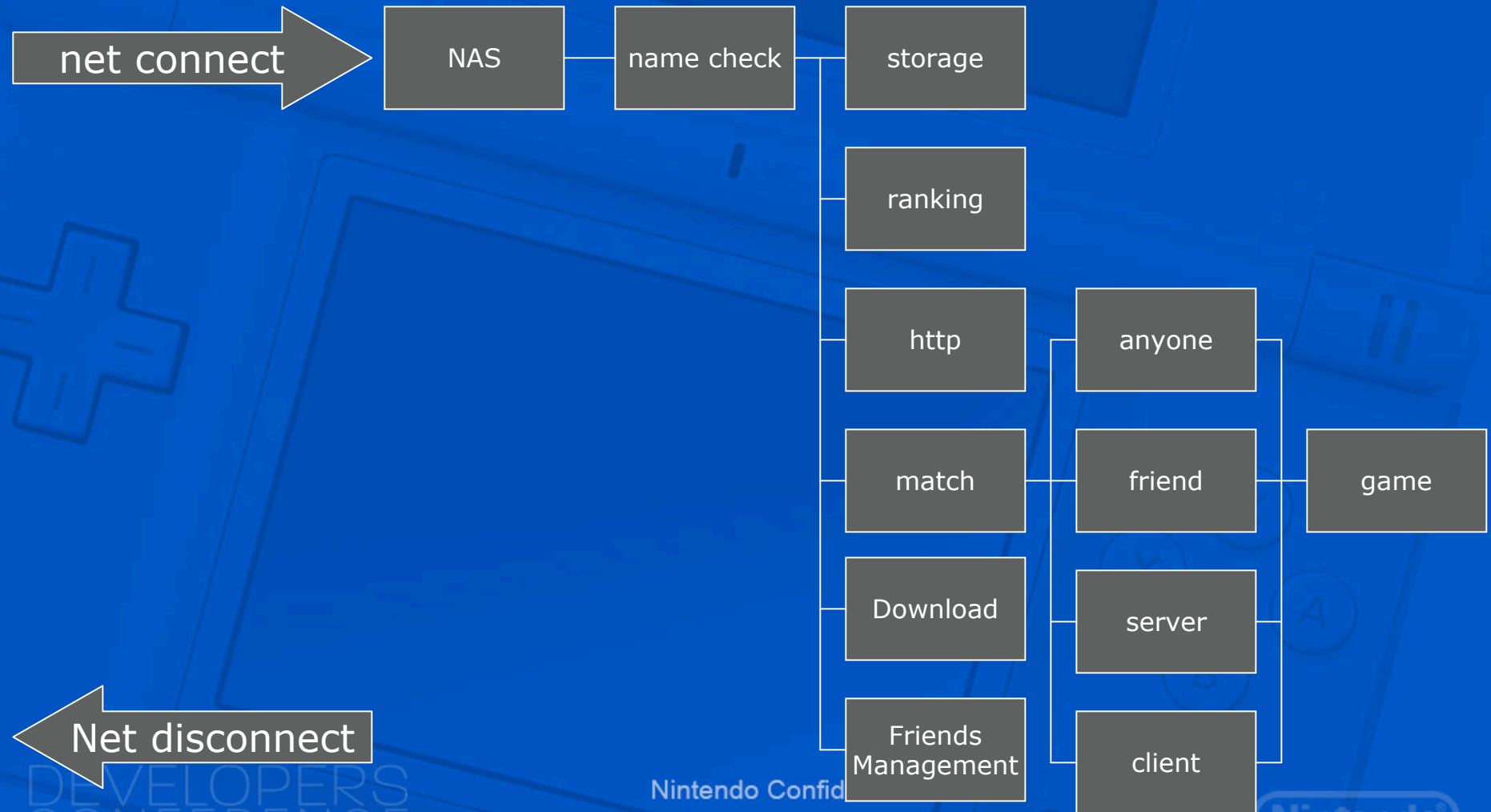


NitroSDK



NITRO-System

# NitroDWC





# NitroDWC-DL

net connect



A grey arrow pointing to the right, containing the text "net connect".

NAS

NDS

Net disconnect



A grey arrow pointing to the left, containing the text "Net disconnect".

Nintendo Confidential

Nintendo®

# NitroWiFi

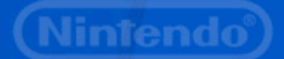
WCM

SOC

CPS

DEVELOPERS  
CONFERENCE

Nintendo Confidential



# Simple, Comfortable, Free

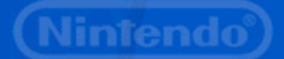
Profile Creation

Contact Management

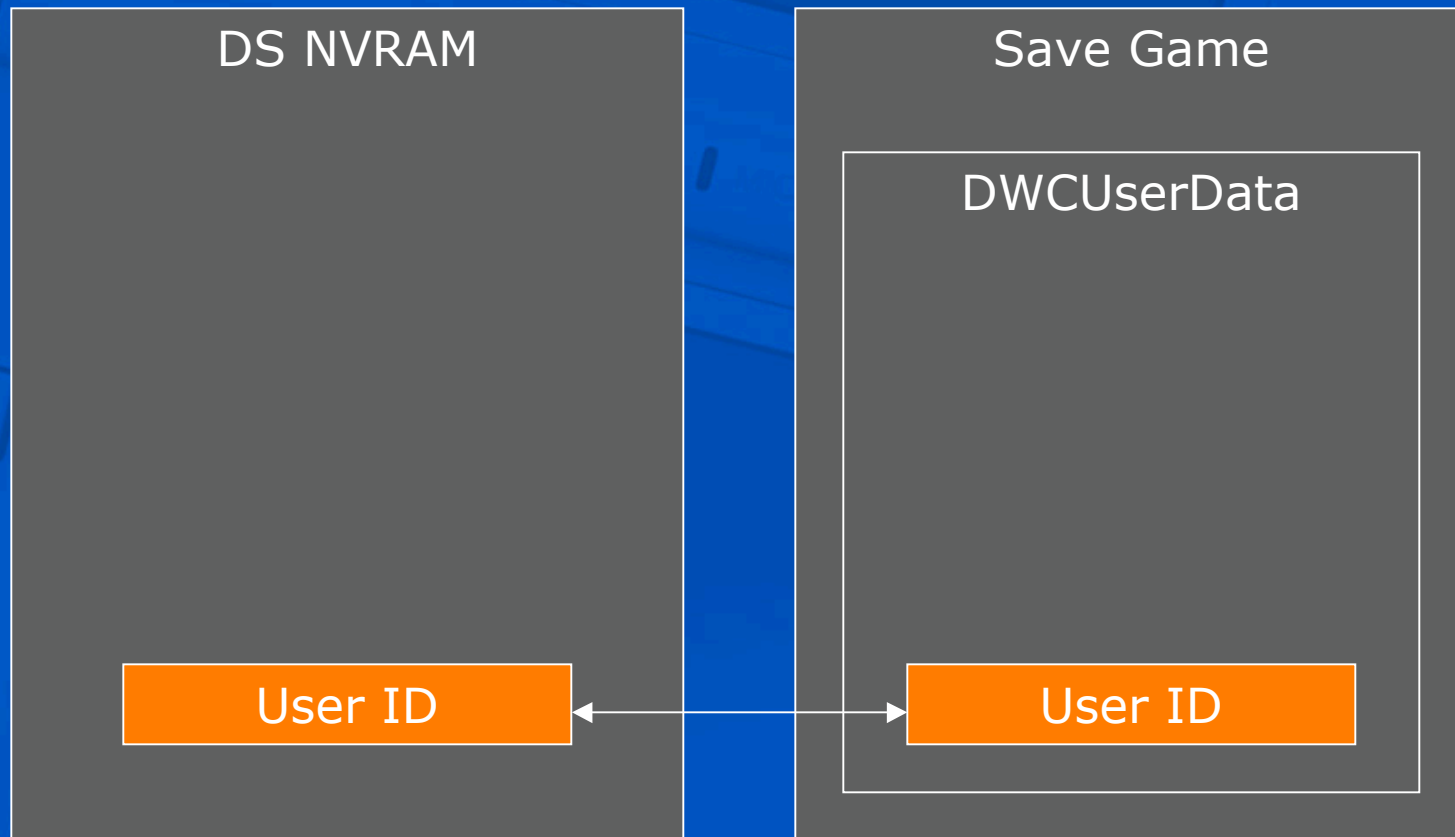
Matching

DEVELOPERS  
CONFERENCE

Nintendo Confidential



# Card / Console Pairing



# Setup Utility





# DWCUserData

Gamecode

Dirty Flag

DWCUserData

Unique ID

Profile ID

# DWCFriendData

Buddy Flag

DWCFriendData

Friend Code

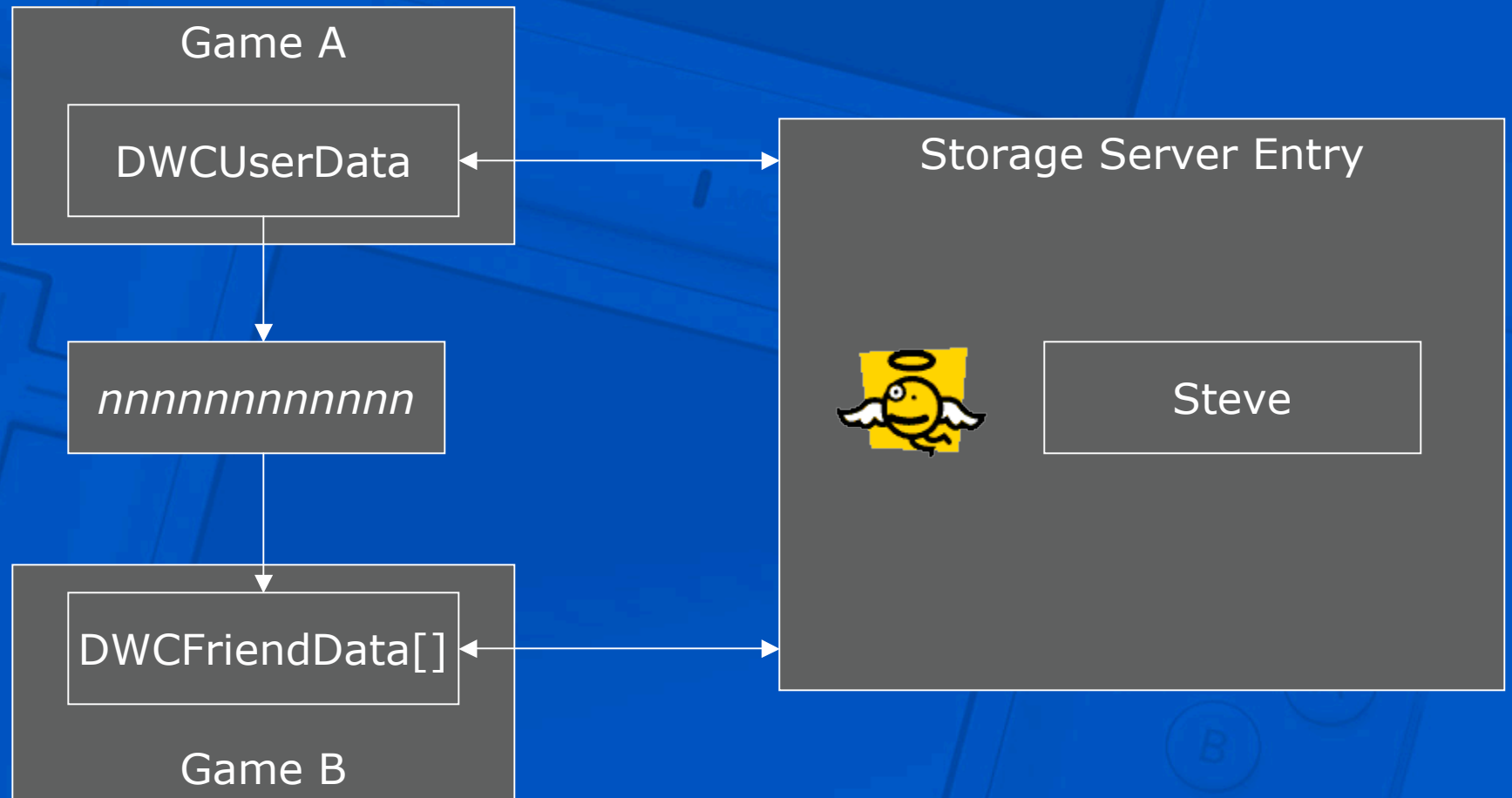
Profile ID

Gamecode

Nintendo Confidential

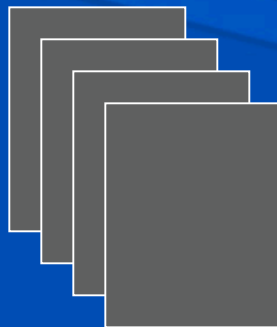
Nintendo®

# Friend Code



# "Friend Roster™"

"buddy flag"



DWCFriendData contact[<=64];

data access

server sync

matching

query status

ranking

# "Friend" & "Rival"

## Friend:



nnnnnnnnnnnnnn

- Friend code entered through UI
- Obtained by means outside of the game
- "Friend" privileges
- Required

## Rival:



nnnnnnnnnnnnnn

- Contacts encountered by the game
- Do not have friend privileges
- Optional

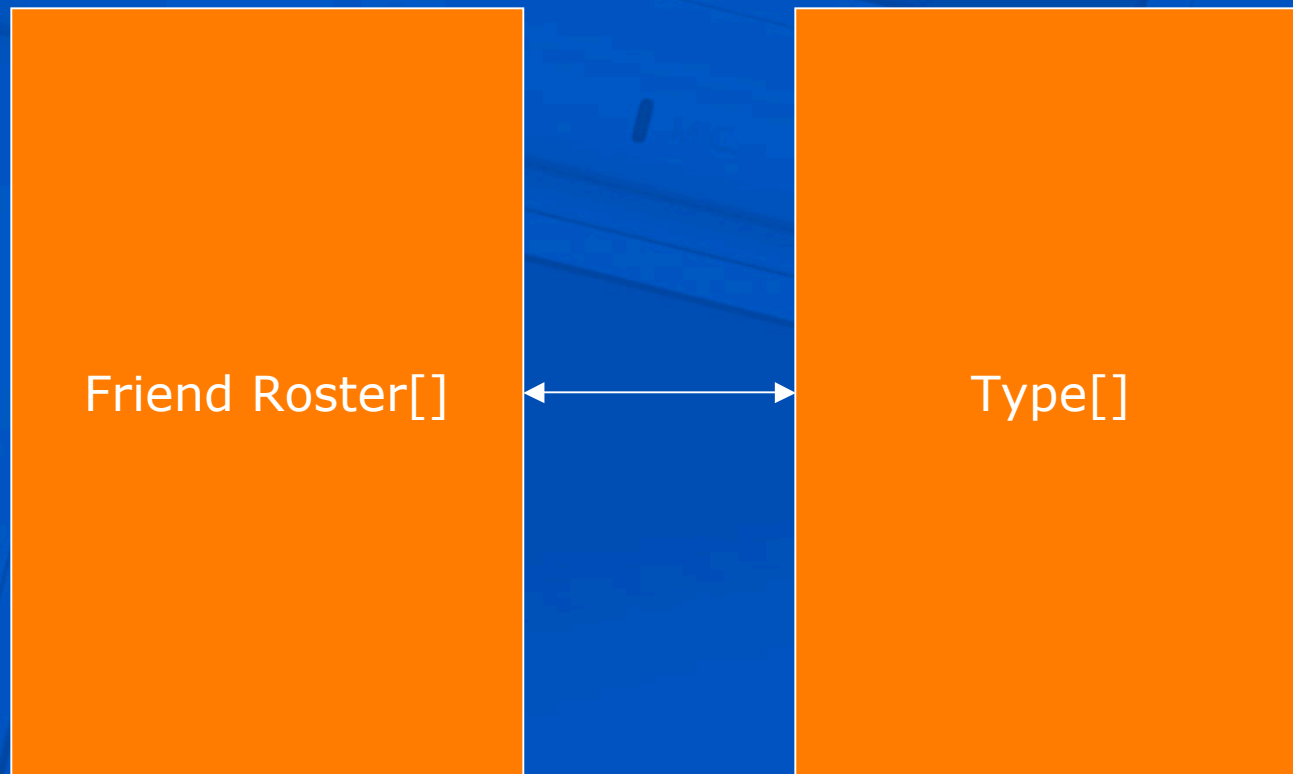
Nintendo Confidential

DEVELOPERS  
CONFERENCE

Nintendo®



# Friend Roster, Friend & Rival



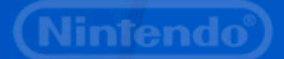
# Subscription Fee



**\$0.00USD / \* !**

DEVELOPERS  
CONFERENCE

Nintendo Confidential



# MP Friend Exchange

- Call `DWC_Init()` – create unique ID
- Create `DWCUserData` with save game
- Create exchange token
- Exchange token in MP game
- MP game players are friends

# Peer Matching for Anyone

- No lobby
- Specify n players
- Match filter
- Player evaluation callback
- Matched callback
- Will only match for other players also in same matching process

# Peer Matching for Friends and Rivals

- Lobby Friend Roster for state
- Create index for members to match
- Match for n players
- Can match Friend of friend
- Player evaluation callback
- Matched callback
- Will only match for other players n same matching process



# Client / Server Matching

- Server game setup server, max players, new client callback, matched callback
- Client lobby for servers using "Friend Roster"
- Client connects to server using Friend Roster index
- Client uses matched callback
  - New client callback, if other system tries connection to the client.

# Ranking Server Access

- Post category, score, user data
- Get own rank
- Get global, near, and relative rank for Friend Roster
- Up to 10 entry results
  - Up to 30 entry results will be available soon.
- Access frequency is limited

# Game Messaging

- DWC handles NAT traversal
- Associate ID
- Connection mask (32bit)
- "Reliable" and "Unreliable" (UDP)



Thank You!  
[support@noa.com](mailto:support@noa.com)

DEVELOPERS  
CONFERENCE

Nintendo Confidential

