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# Seminar Computer Networks

## *Interactive Teaching - an experiment*

Development Crash Course

Bernhard Wiegel and Joao Carneiro, Institute OMI, November 15th, 2011

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## Content

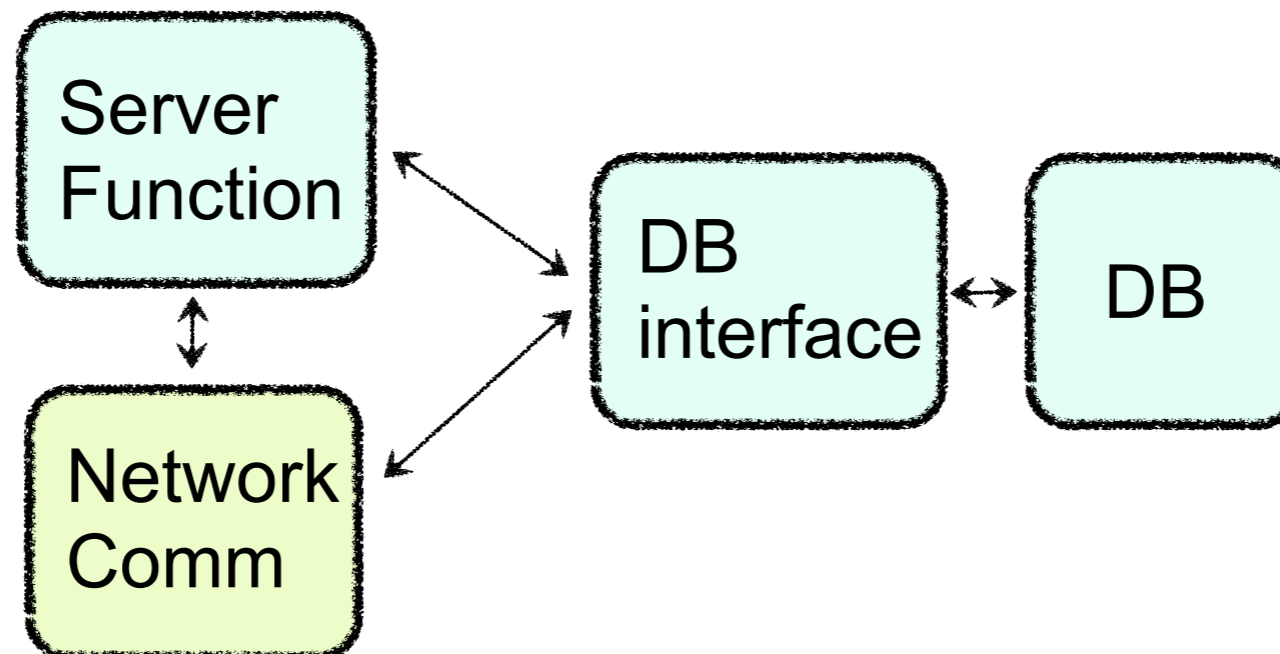
- System design review
- Apple development workflow
  - Apple developer membership
  - Subversion server access
- XCode development / tips & tricks
- Sample client / server as a template for implementation

## Architecture

- Client on mobile devices (tablets, smartphones)

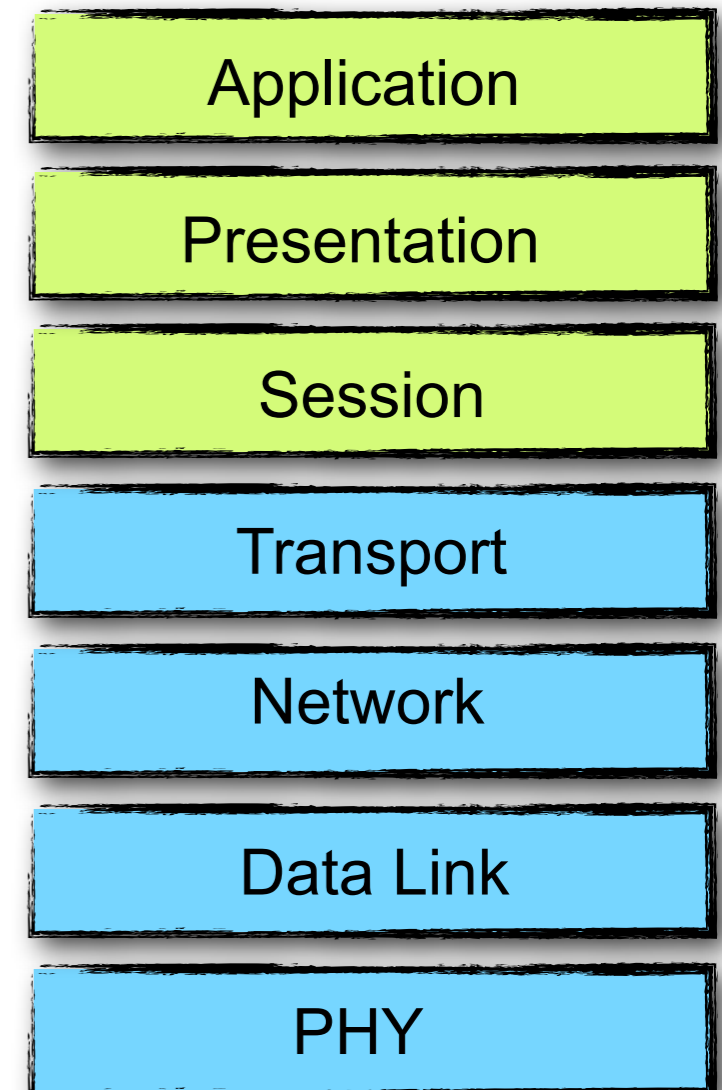


- Server



## Communication Architecture

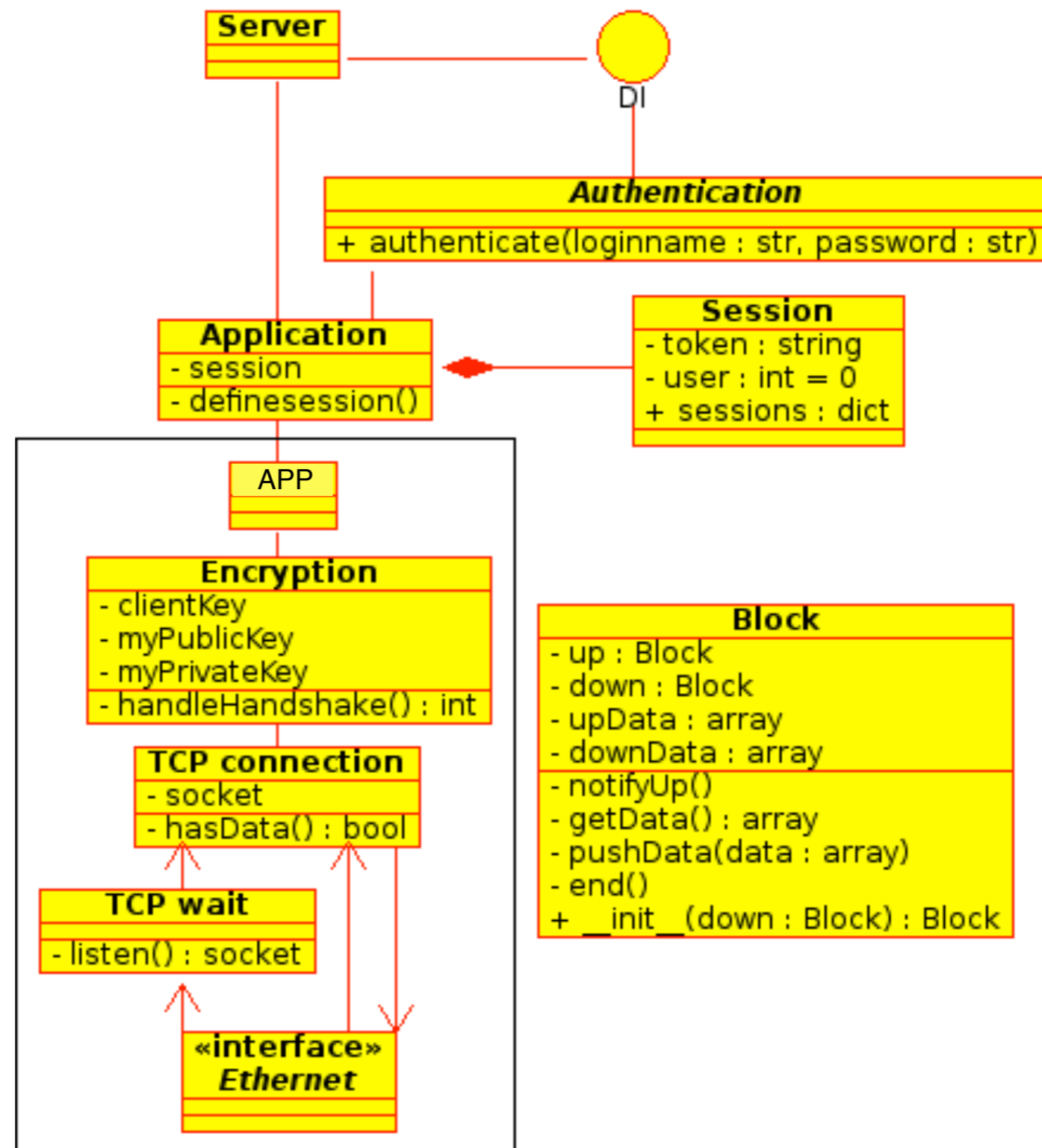
- Layer 7 - Application protocol, Service Discovery / Advertisement protocol
- Layer 6 - Encryption, Authentication
- Layer 5 - Sessions overcome changes in underlying layers
- Layer 3 & 4 - TCP / IP protocol family
- Layer 1 & 2 - e.g. Wireless LAN 802.11 protocol



## Module tasks (presented by groups)

- Session and Identity management
- Encryption
- Authentication
- Application protocol
- Service discovery
- Service advertisement
  
- Security model

## Software structure of communication architecture



## Module interfaces

- Protocol classes derived from Block

<b>Block</b>
- up : Block
- down : Block
- upData : array
- downData : array
- notifyUp()
- getData() : array
- pushData(data : array)
- end()
+ <code>__init__</code> (down : Block) : Block

- AUTH class

<b>Authentication</b>
+ authenticate(loginname : str, password : str)

- Session class

<b>Session</b>
- token : string
- user : int = 0
+ sessions : dict

## Apple development workflow

- Signup with the apple development center to join our development group
  - You should have received an invitation email last tuesday - please complete the signup
  - As result your AppleID connected to our team dev program
- Sign your iOS Apps
  - iOS provisioning portal at [developer.apple.com](http://developer.apple.com) (in Member Center)
  - Create your personal certificate and upload it
  - We will create a Provisioning Profile using your certificates
  - Download and install the Provisioning Profile on your development Mac
- Run a developed App on the iPad

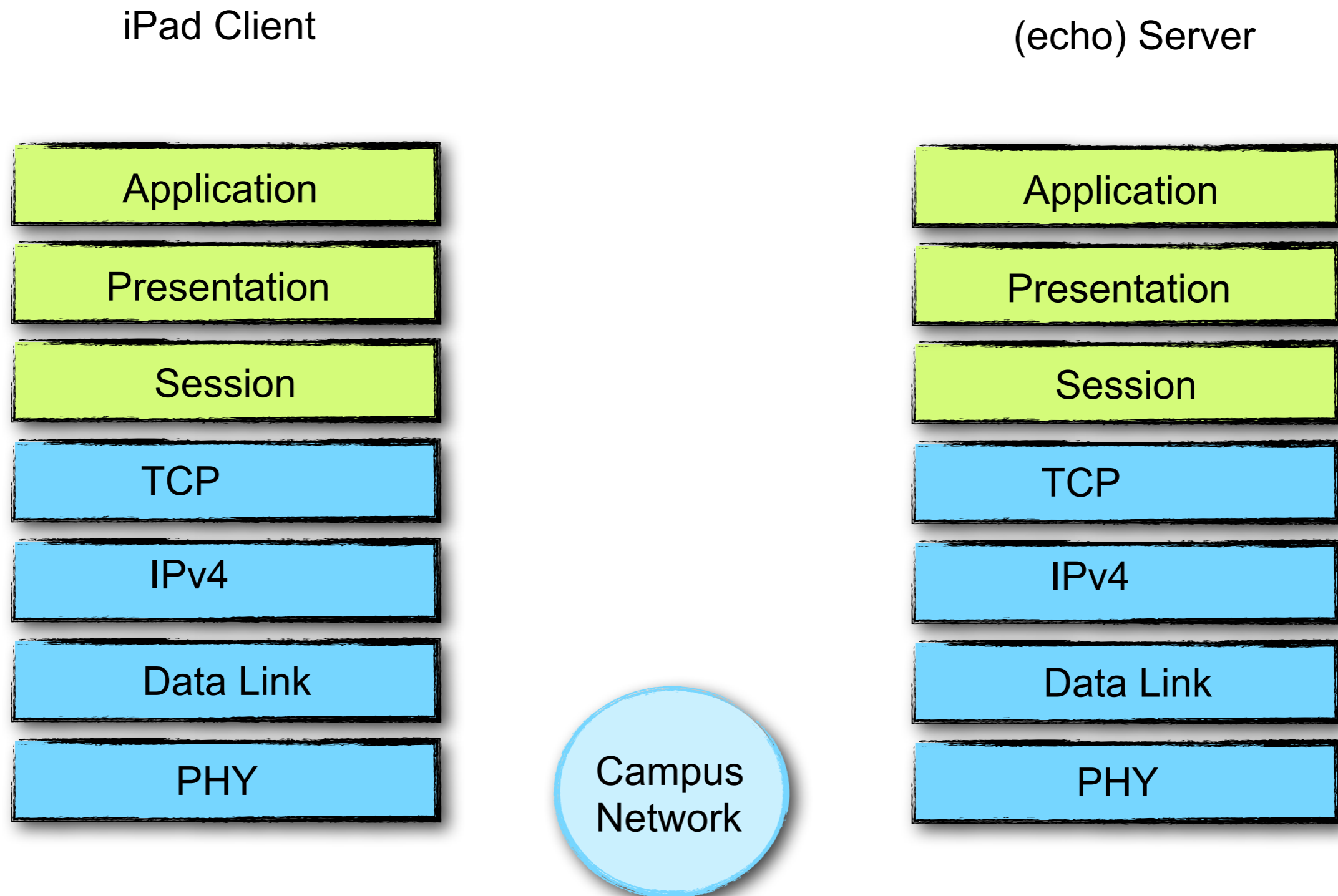
## Access and commit code using Subversion

- Each team has an account on our Subversion server
  - Login: sem\_tXX  
XX is your team number, e.g. Team 4 -> sem\_t04
  - Password:  
please note ...
- Server repository path:
  - iLclient  
`https://134.60.30.80/svn/ilearning/iLclient/`
  - iLserver  
`https://134.60.30.80/svn/ilearning/iLserver/`
- Setup of repositories in Xcode
  - Xcode 4 has some bugs using Subversion repositories
  - In case connection fails in Xcode  
Terminal utility:  
`svn info --username sem_tXX https://134.60.30.80/svn/ilearning/iLclient/`
  - Accept certificates for our server permanently

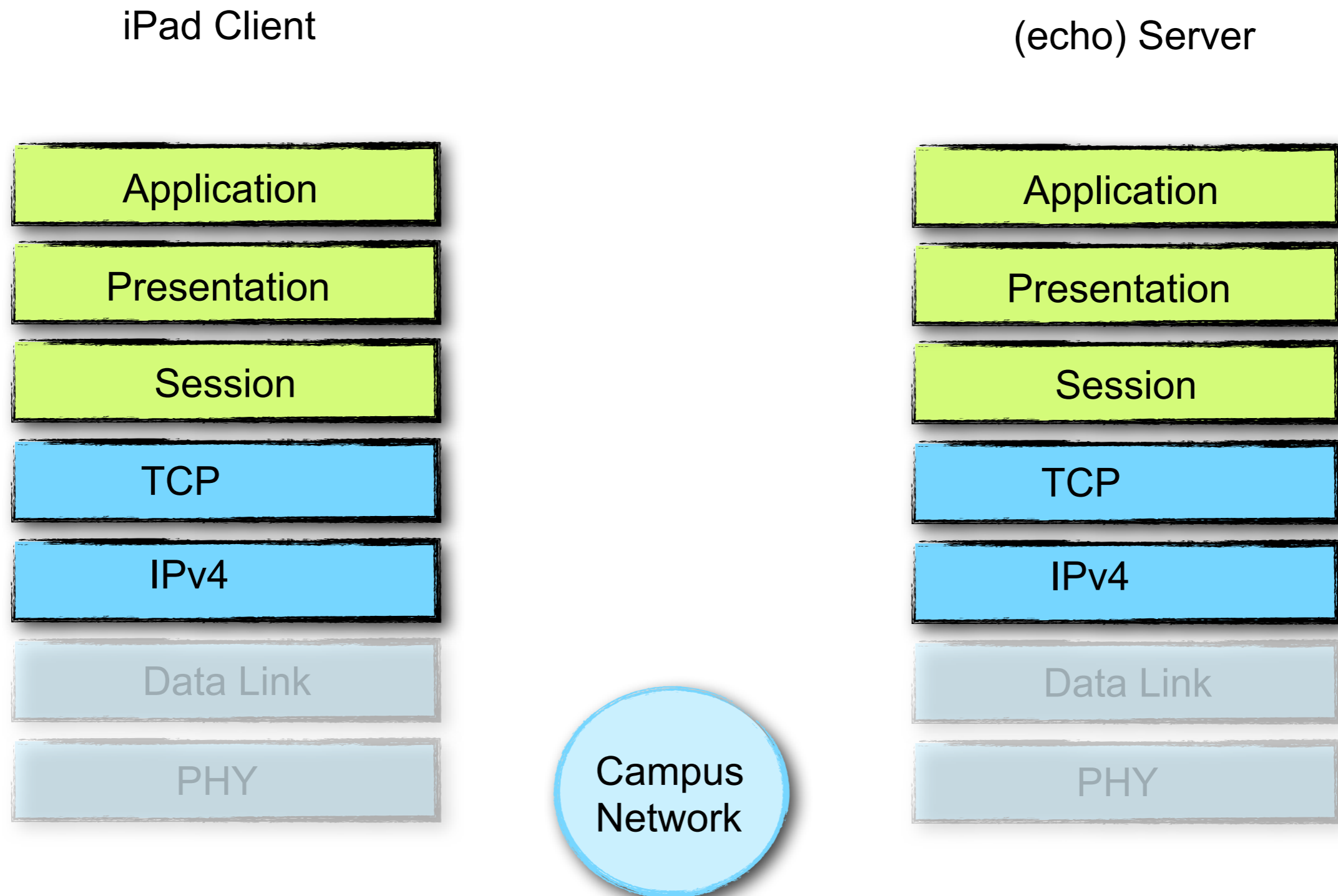
# XCode and iOS development - Tips & Tricks

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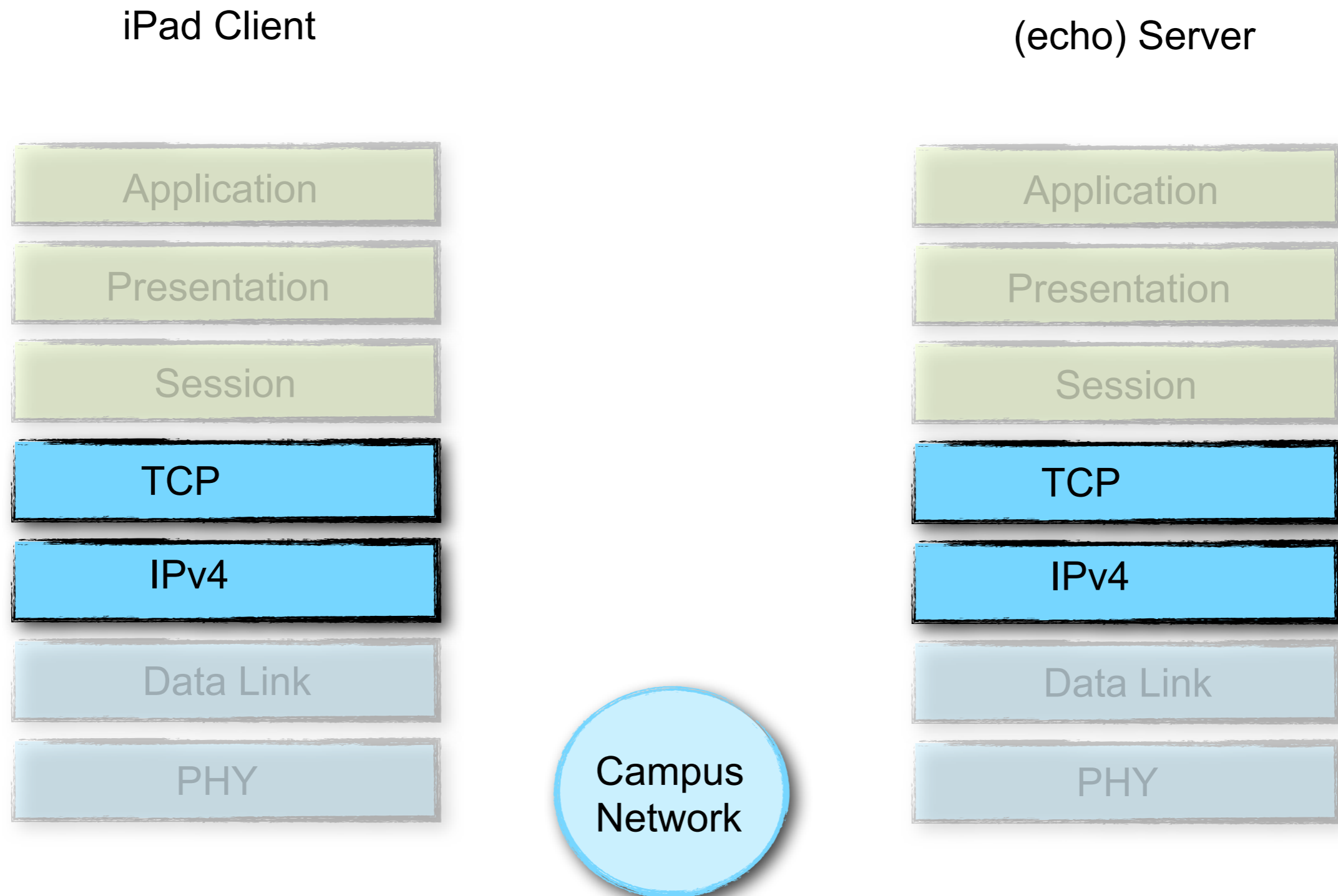
## Sample Client - Server



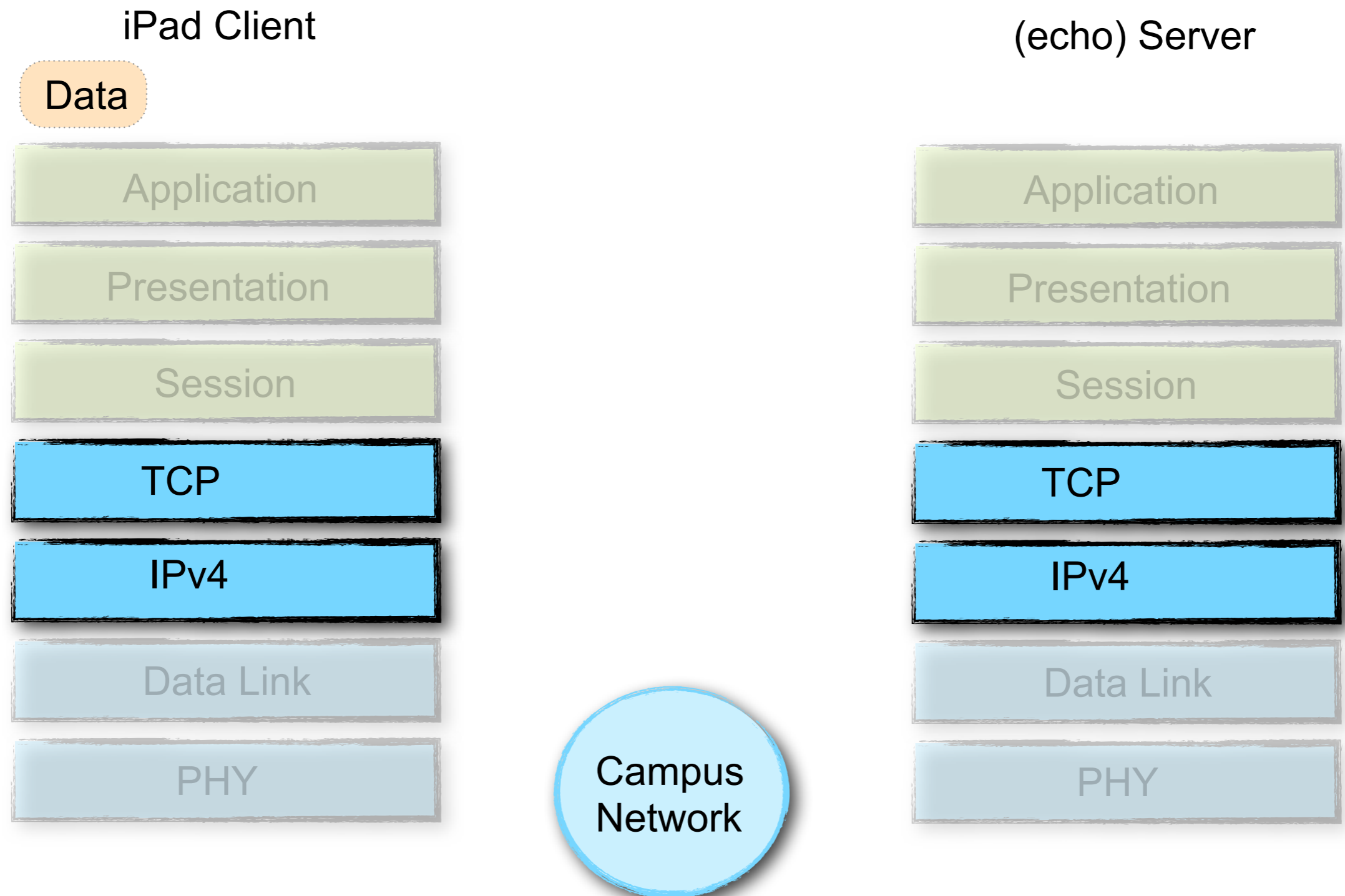
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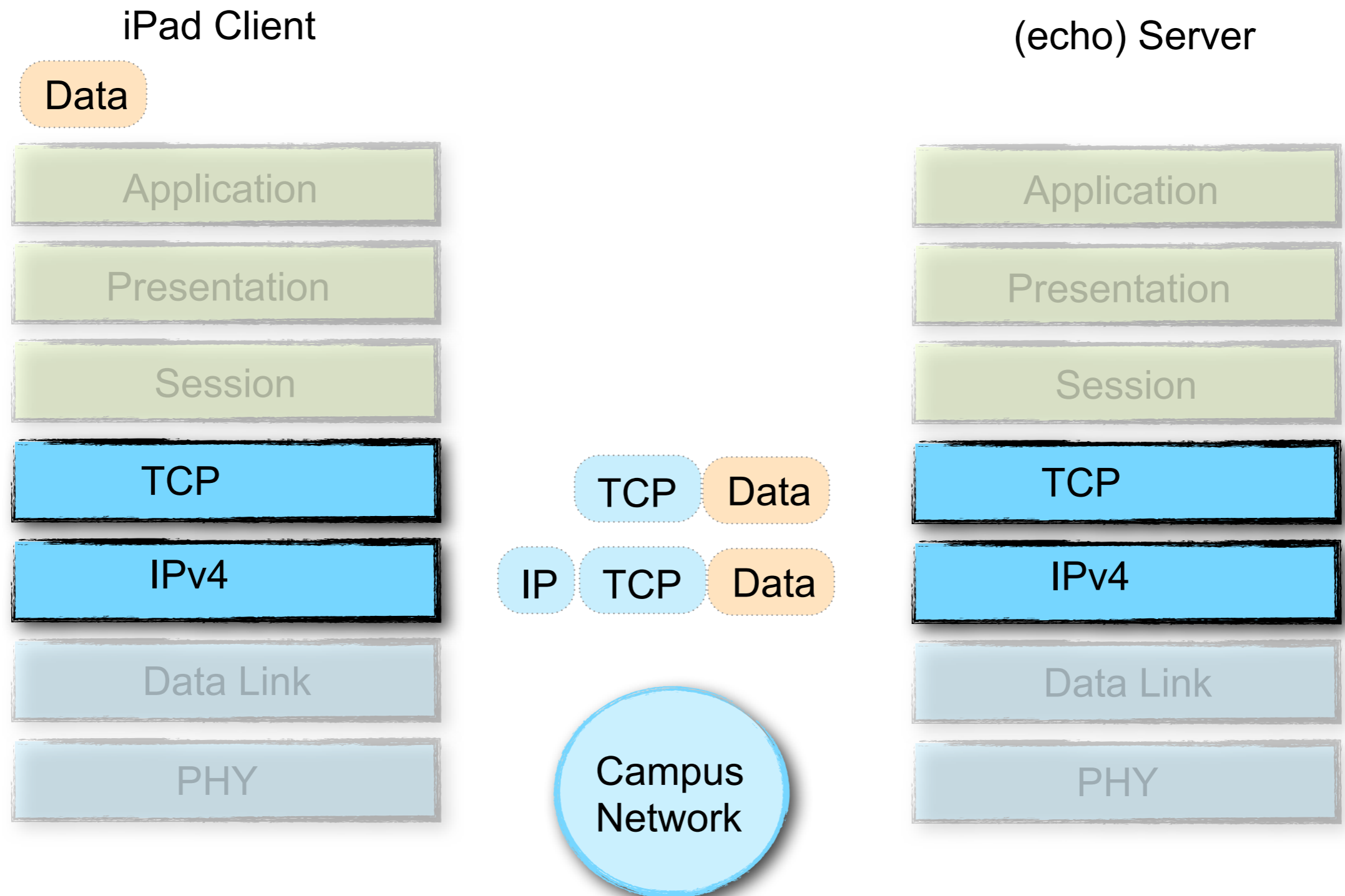
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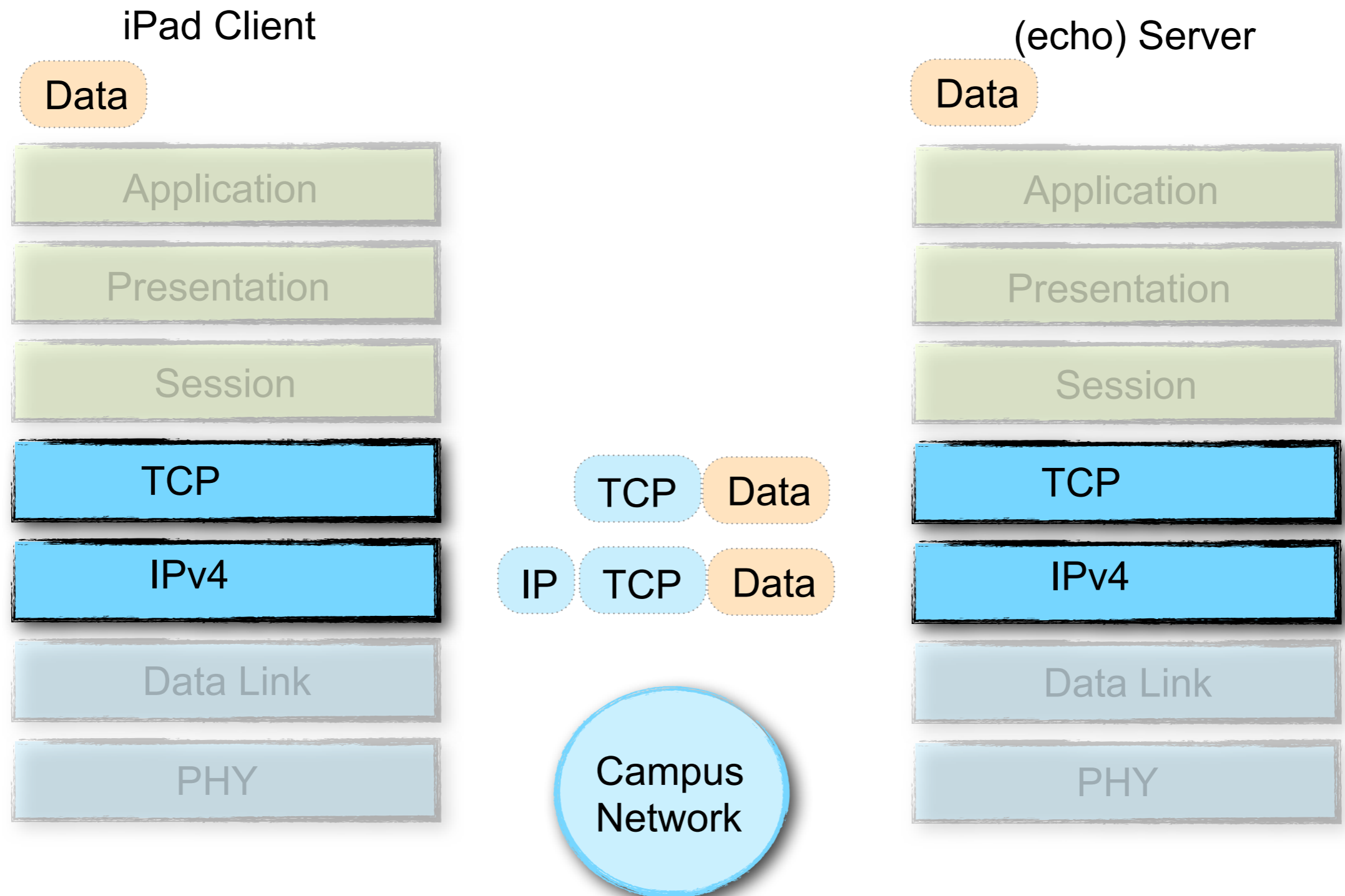
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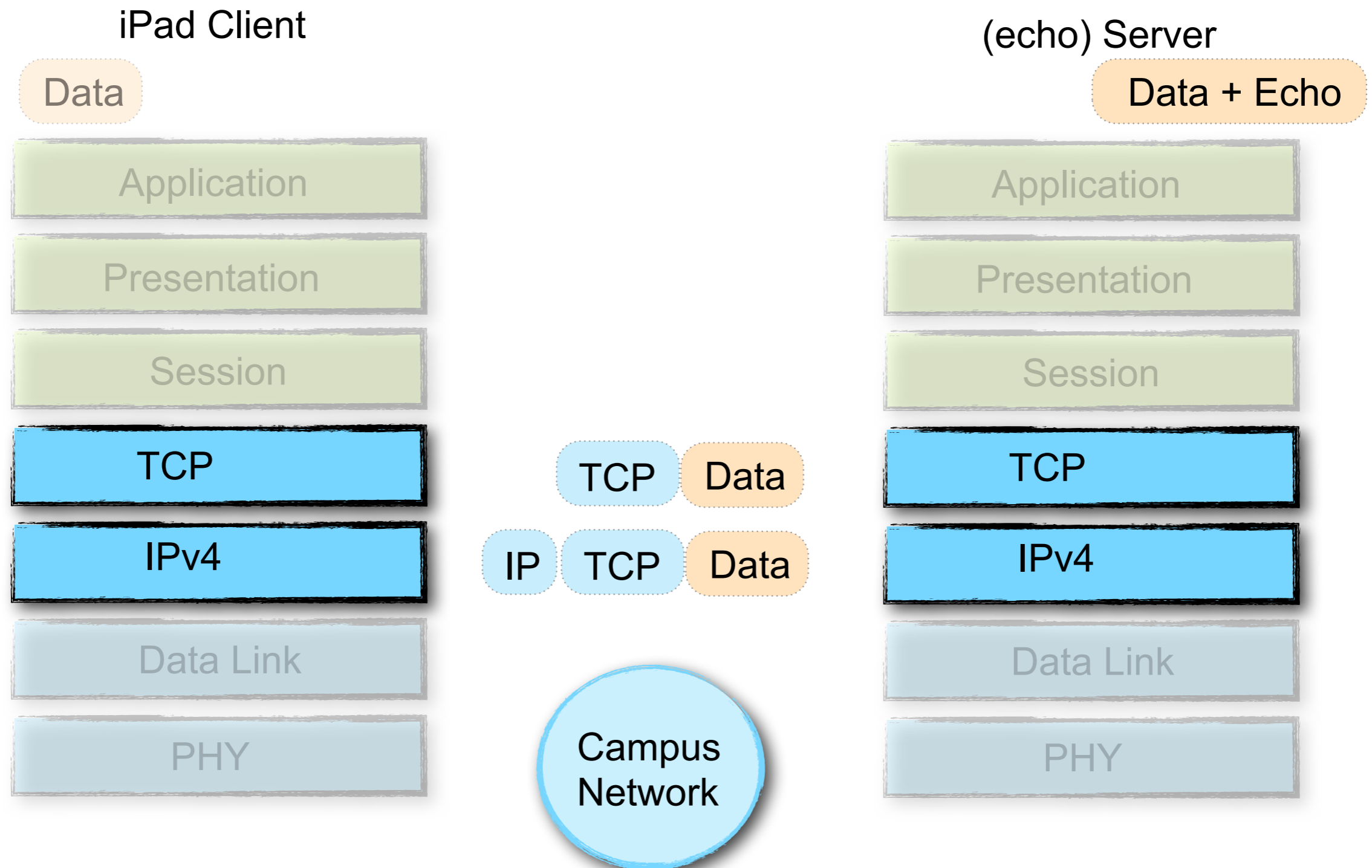
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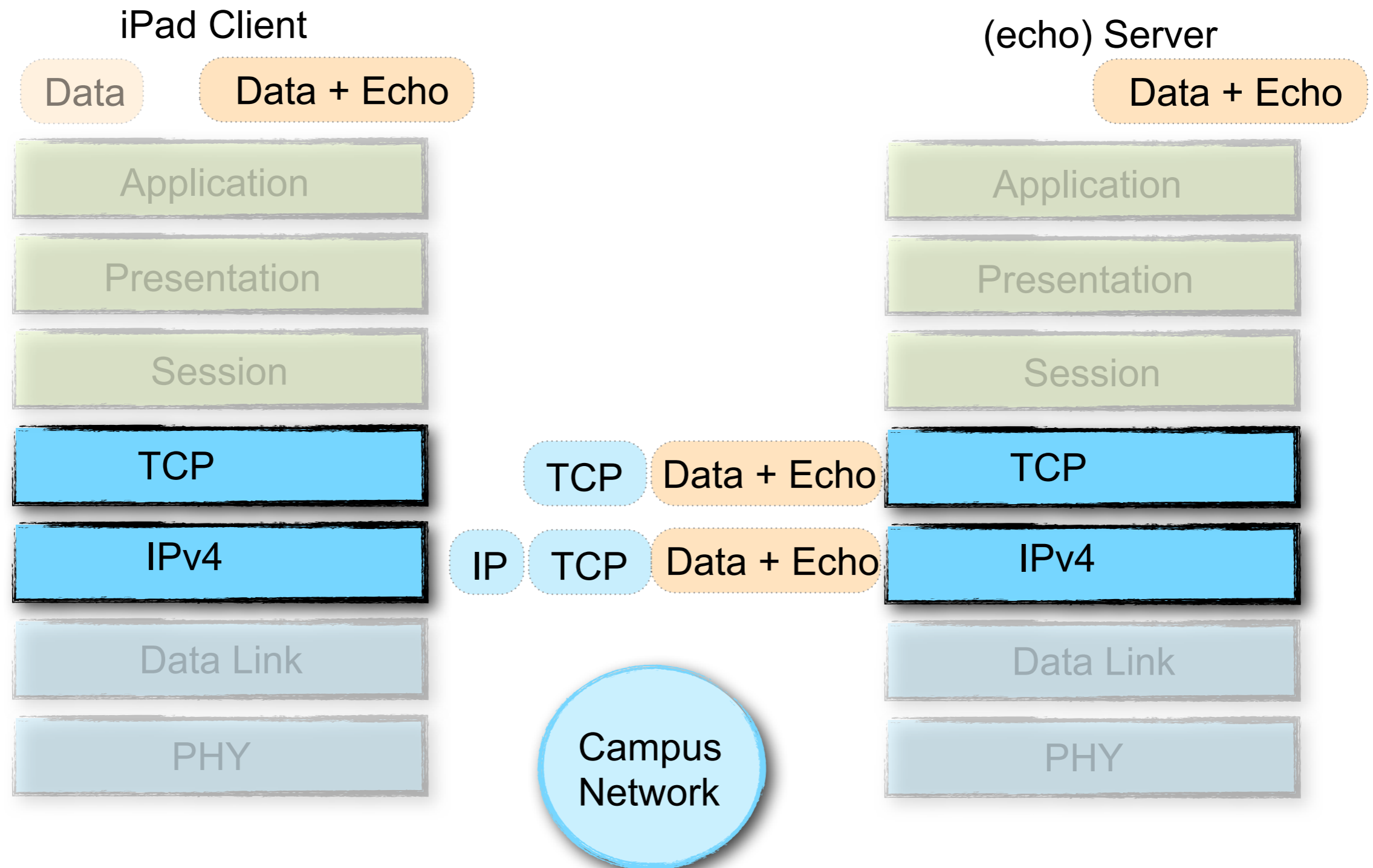
## Sample Client - Server



## Sample Client - Server



## Sample Client - Server



## Contact information

### Information on the web

- Group assignments
- Presentation dates
- Presentation templates for Open-Office and PowerPoint
- Templates and tutorial for implementation part
- Lecture material
- Web: [www.uni-ulm.de/in/omi](http://www.uni-ulm.de/in/omi)

### Contact

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