

# P2P SIP

Part 2

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# Agenda

- The Distributed Database Function
- NAT Traversal
- Locating and Joining an Overlay
- Possible client behaviour
- Summary

# The Distributed database function(1)

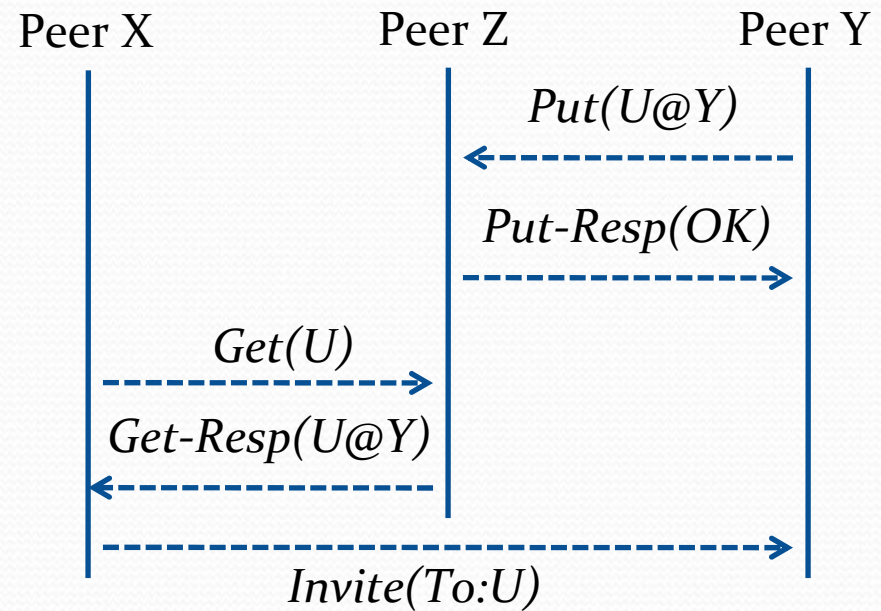
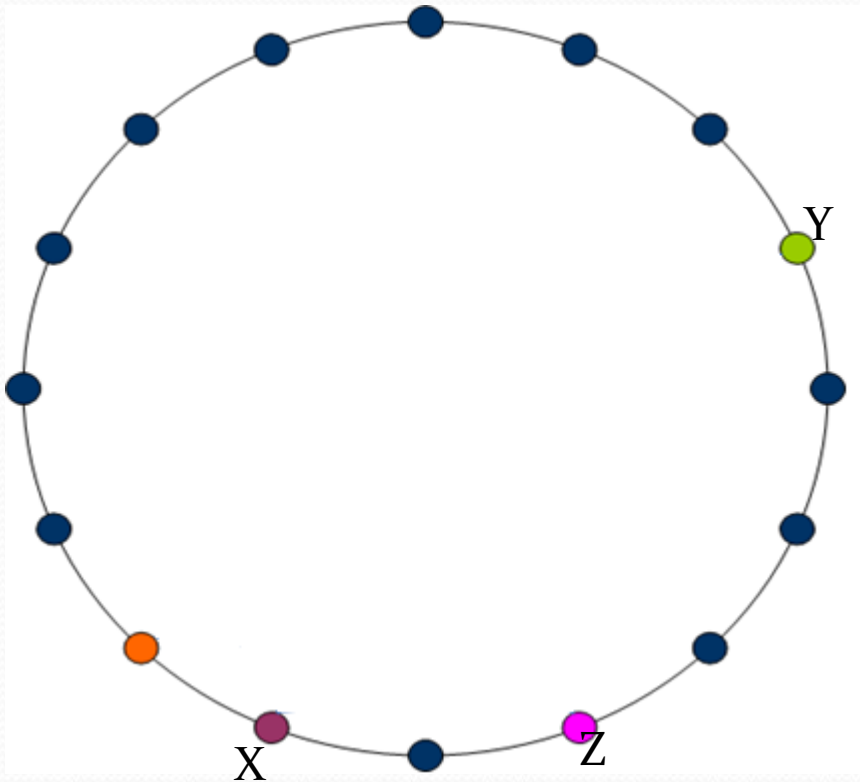
- Serves to store information about resources
- Each resource has unique resource ID
- Information stored in the resource record associated with a user may include:
  - User full name
  - Location of the UA the user is using



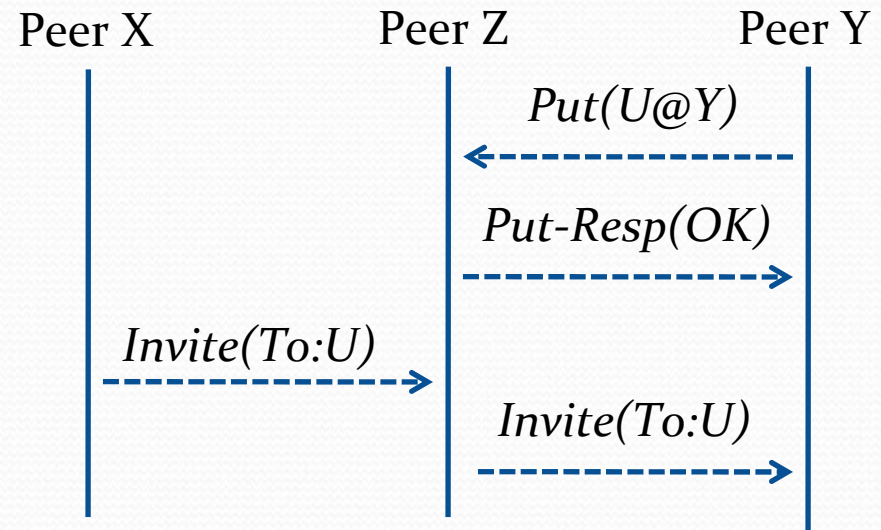
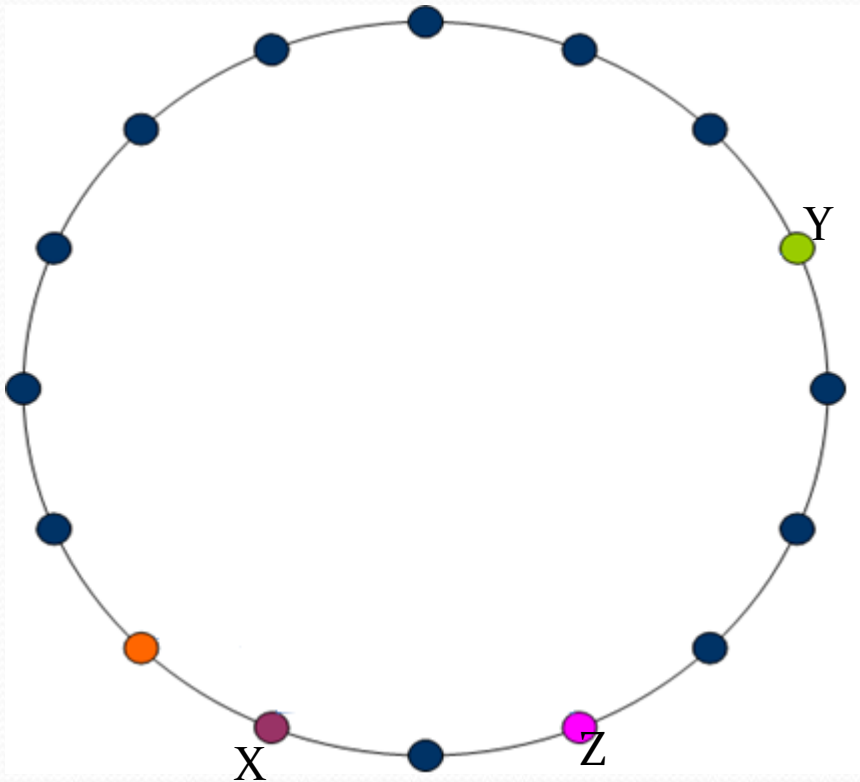
# The Distributed database function(2)

- Information stored in the resource record associated with a service may include:
  - Peers offering the service
- Peer must have credentials for a service

# Using the Distributed database function(1)

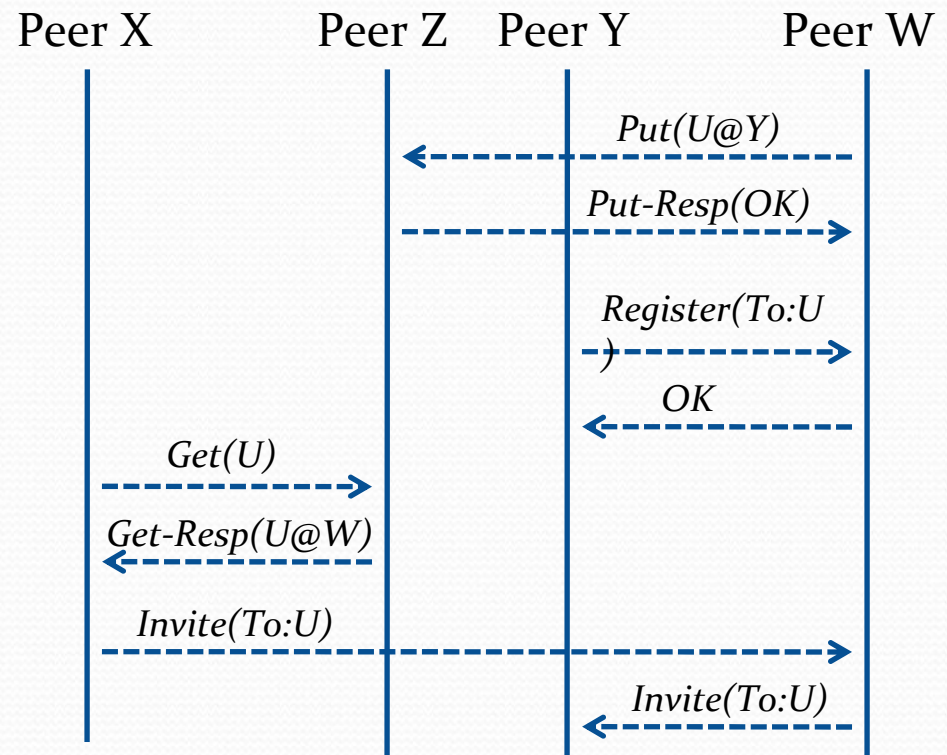
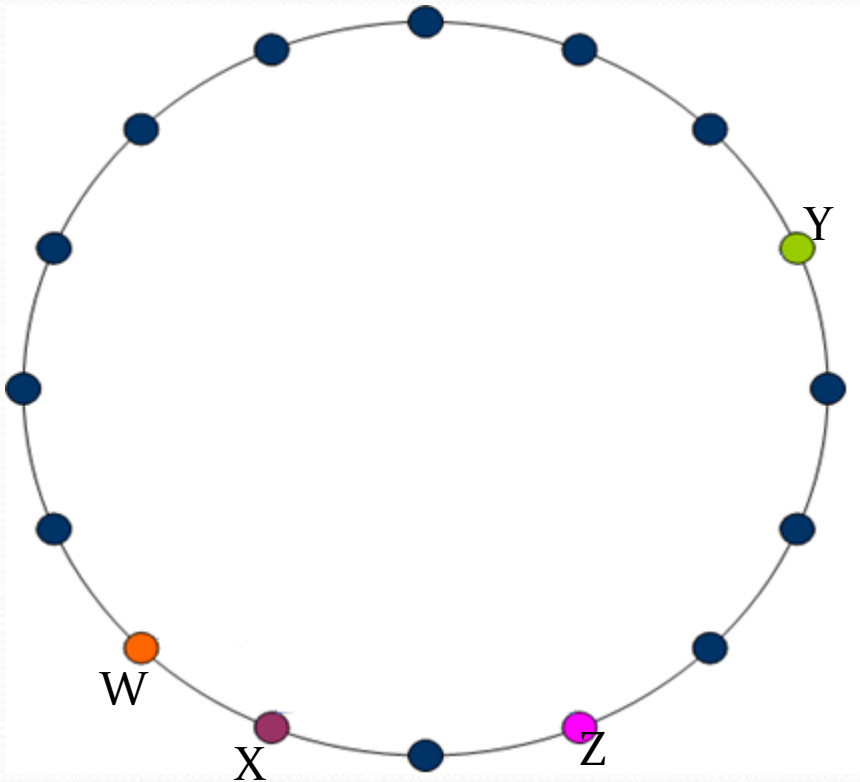


# Using the Distributed database function(2)

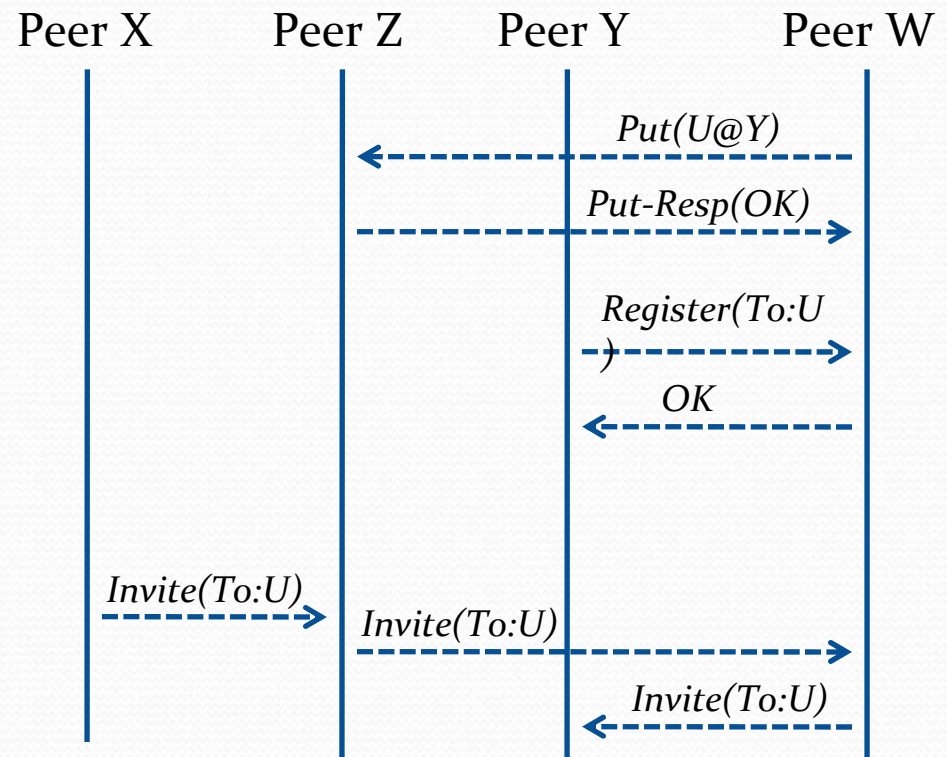
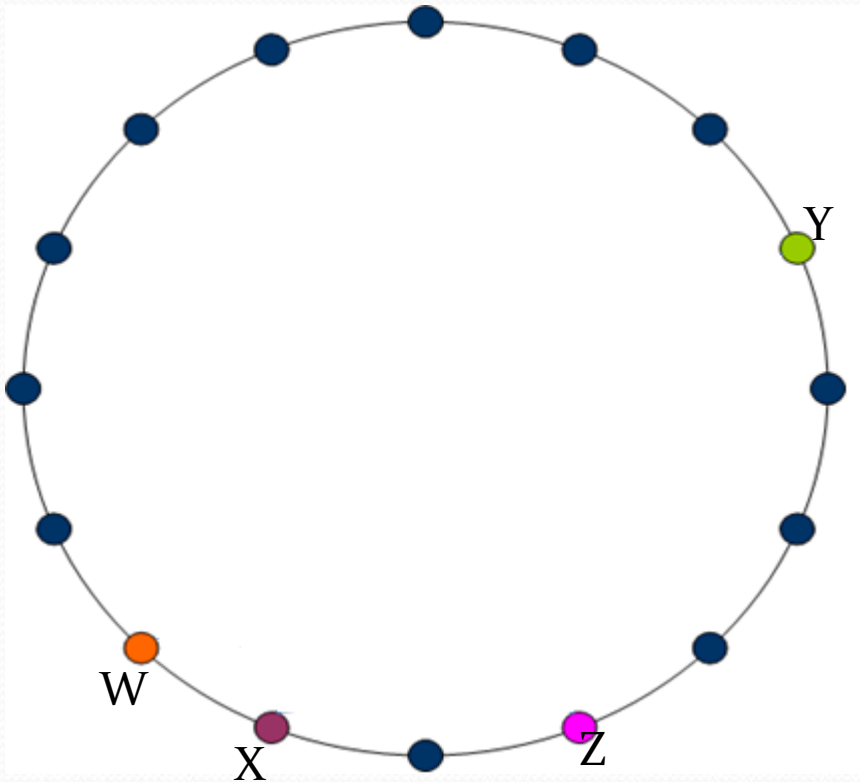




# Using the Distributed database function(3)



# Using the Distributed database function(4)





# NAT Traversal

# NAT Traversal(1)

- Divide the peers to two groups:
  - Super peers (public ip addresses)
  - Ordinary peers (private ip addresses)

## Drawbacks

- Assumes there are a sufficient number of peers with public ip addresses to serve as super peers
- The above assumption fails where every peer is behind a NAT

# NAT Traversal(2)


- Treat all peers as equals and establishes a partial mesh of connections between them.
- Messages are routed along the edges in the mesh connection

## Drawbacks

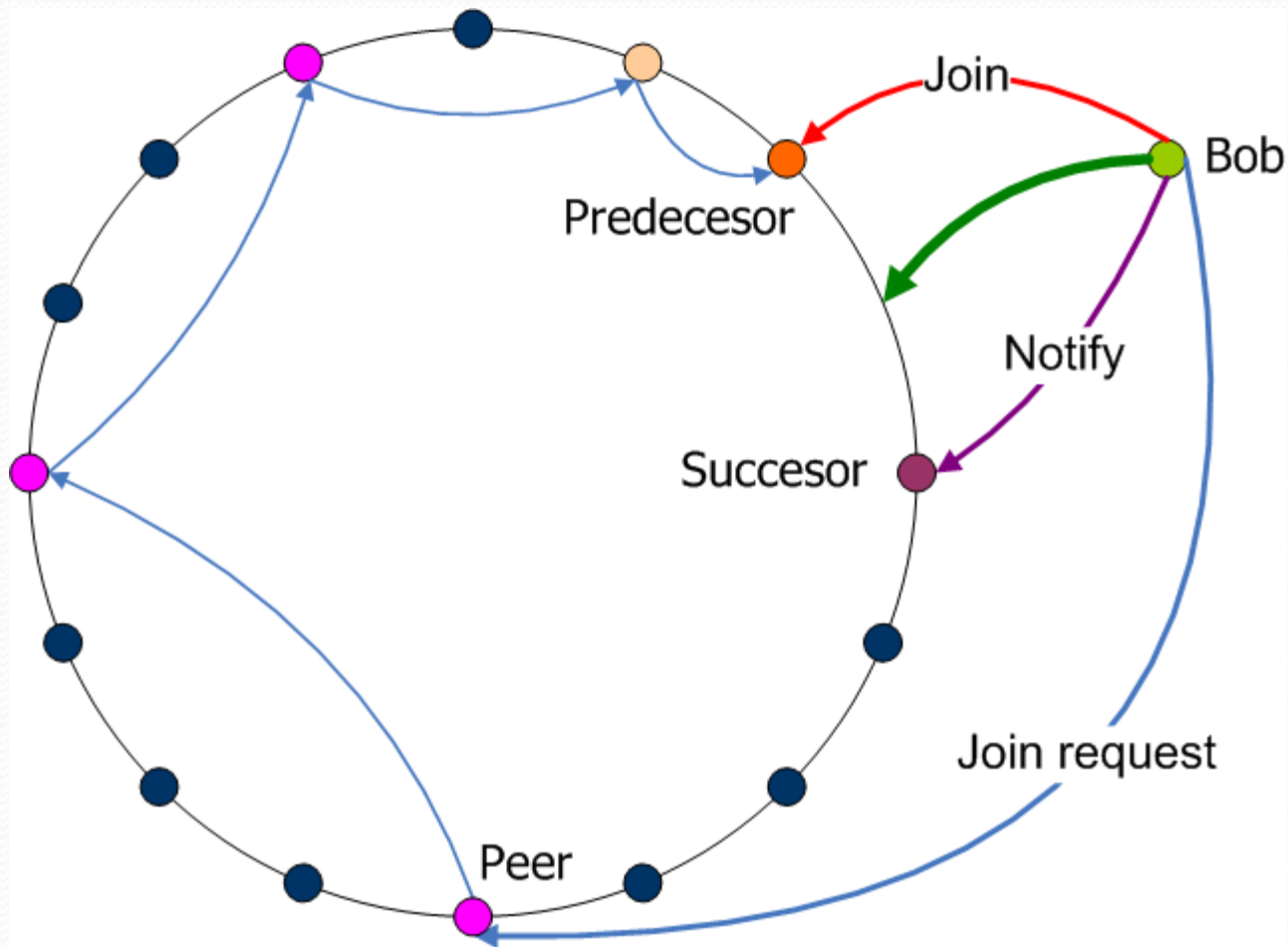
- Less efficient in overlays with large number of peers



# Locating and joining an overlay

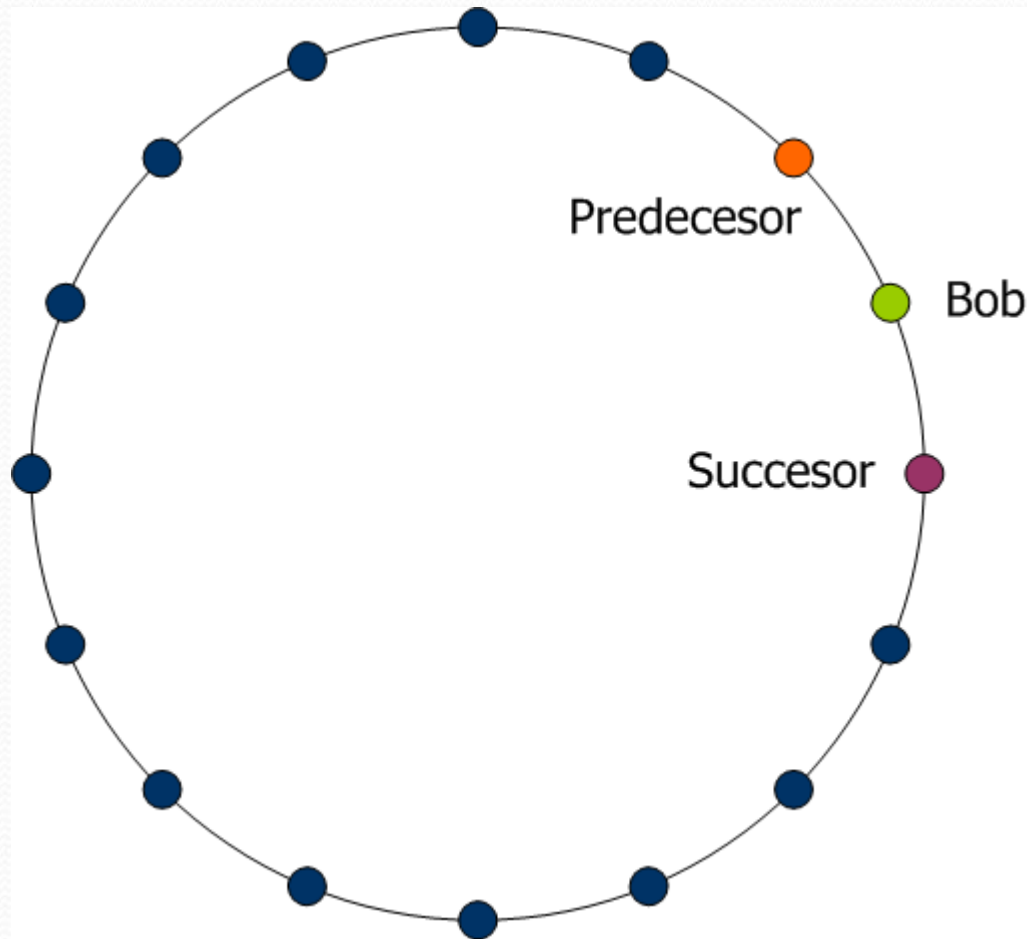
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- Obtain a peer-ID for identification of the peer within the overlay
  - Locate a bootstrap peer for the overlay
  - Bootstrap peer refers the peer to an admitting peer
  - Verifications: The joining peer might be asked to present its credentials

- A SIP user agent can be transformed into a P2P SIP client by adding **join**, **leave** and **lookup** capabilities to it

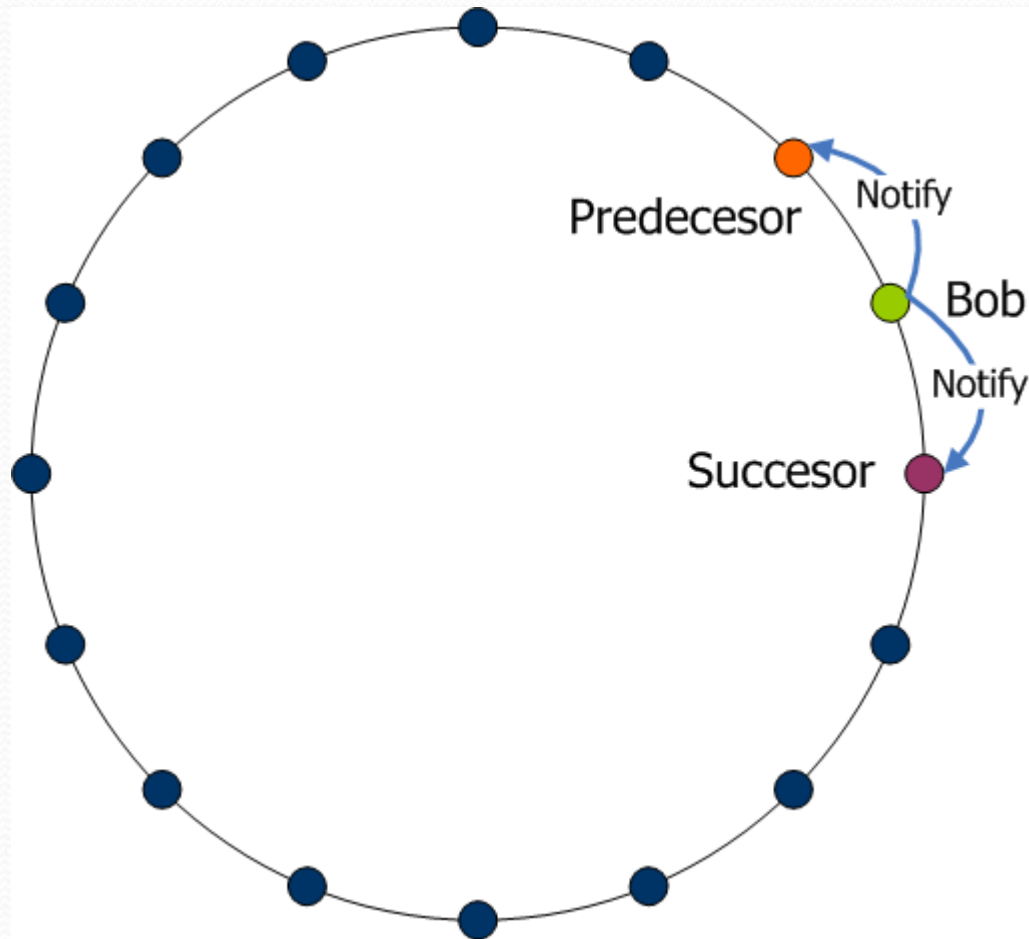




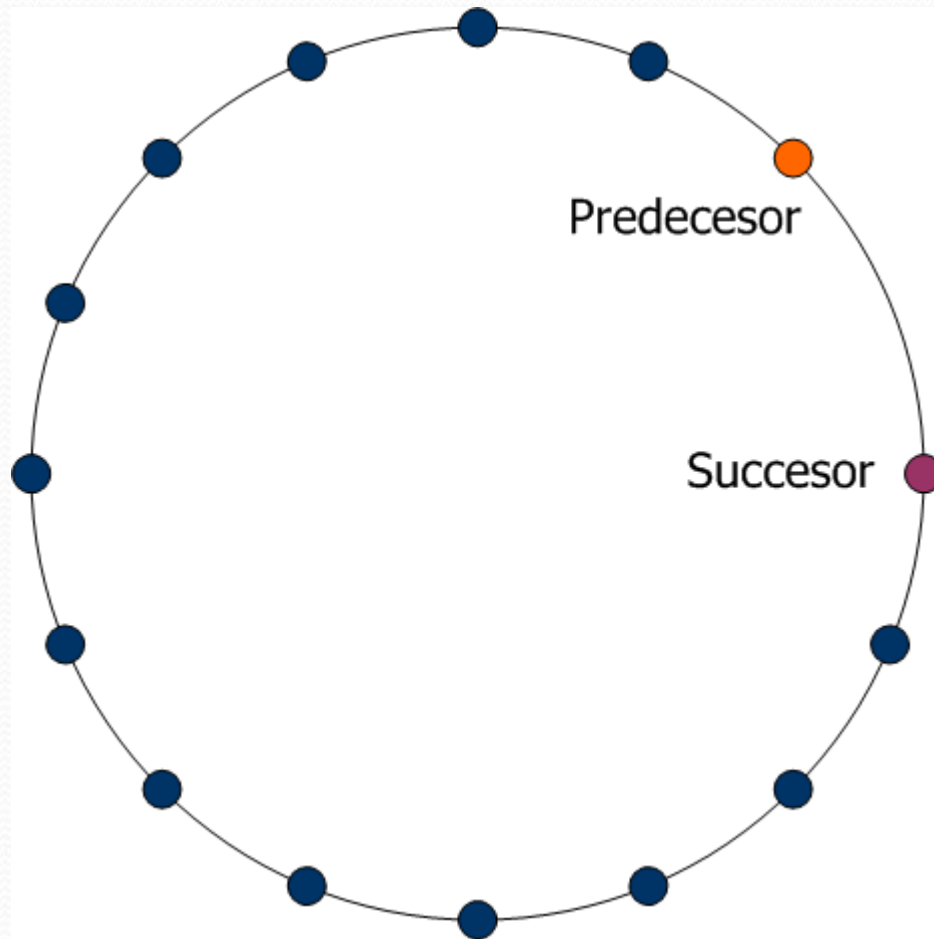
# Joining an overlay



# Leaving an Overlay(1)



# Leaving an Overlay(2)





# Possible client behaviour

- Client interacts with the P2PSIP overlay through an associated peer
- A client can insert, remove, modify and examine records
- A client may send SIP messages to its peer for routing through the overlay

# Possible client behaviour

- Peers to behave as a proxy /registrar
- SIP devices use SIP mechanisms to update, add, remove registrations and send messages to peers and other clients



# Summary

- NAT Traversal issues
- Joining and leaving an Overlay



# References

- <http://ag-projects.com> – Dan Pascu
- [isoc.nl/activ/2007-FoV-II/01-DanPascu.ppt](http://isoc.nl/activ/2007-FoV-II/01-DanPascu.ppt)
- <http://tools.ietf.org/html/draft-ietf-p2psip-concepts-02>

# Thank You

Questions?

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