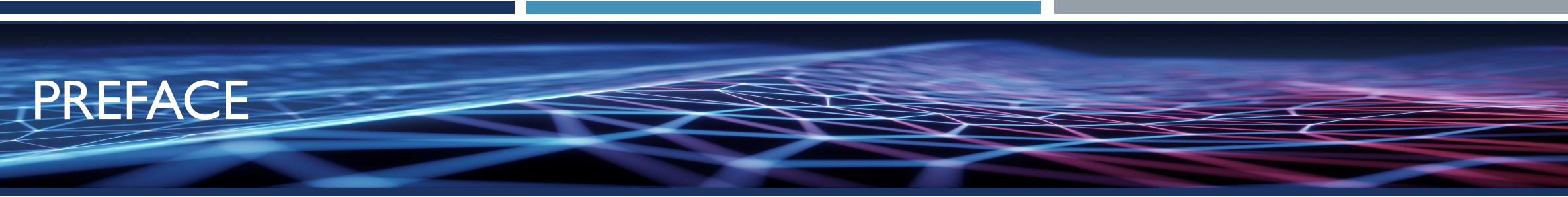




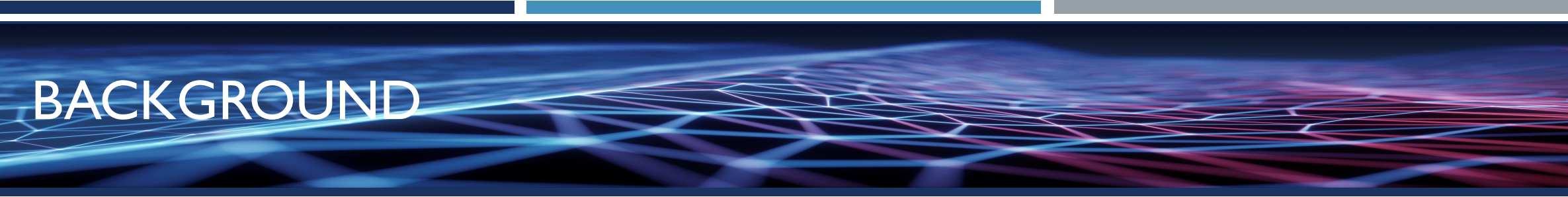
DISTRIBUTED SYSTEMS

DOCKER PLUGIN FOR VOLUME SHARING



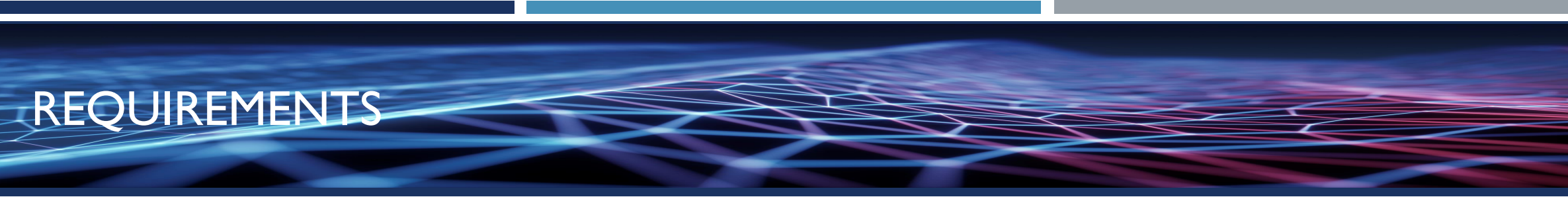
PREFACE

- Scenario – Docker: Single vs clustered
- The problem
- The solution - Theoretically



BACKGROUND

- Docker in Swarm mode
- Consensus
- Raft
- NFS – CAP Theroem



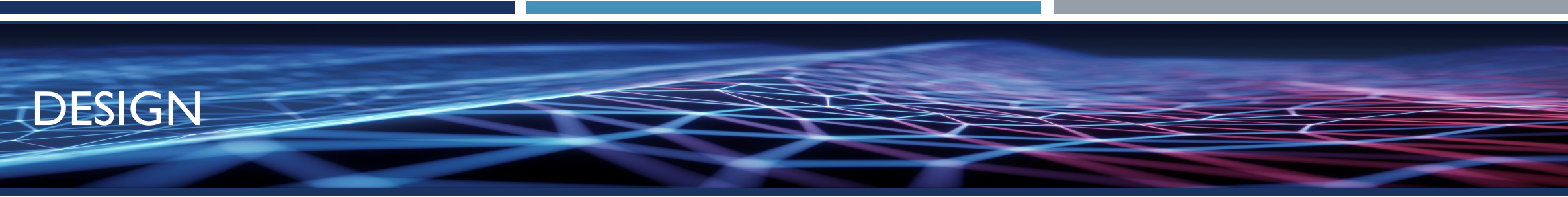
REQUIREMENTS

Functional

- Hide the true volume name to the end user
- Allow the same volume to be used by multiple nodes simultaneously
- Remember the state for each volume until its destruction

Non functional

- Meet all requirements imposed by Docker
- Be completely transparent to the end user
- Ease of deployment
- Compatibility with third-party user interfaces



DESIGN

- Docker plugin protocol
- ReST API
 - Client/server
 - State of resources
 - Uniform Interface
 - Stateless



SELF-ASSESSMENT

- Not trivial
- Solution: Shell script with expected response



DEPLOY/USAGE

- Deploy method - daemon vs plugin
- CLI Usage

CONCLUSIONS

- What i did
 - ❖ Studied plugin reference
 - ❖ Studied Swarm: what is and how it work
 - ❖ Studied Distributed File System
- What i have not did
 - ❖ Rewrite in OOP
 - ❖ Use a DBMS
- What i learned
 - ❖ How a cluster system works
 - ❖ DFS
 - ❖ NFS