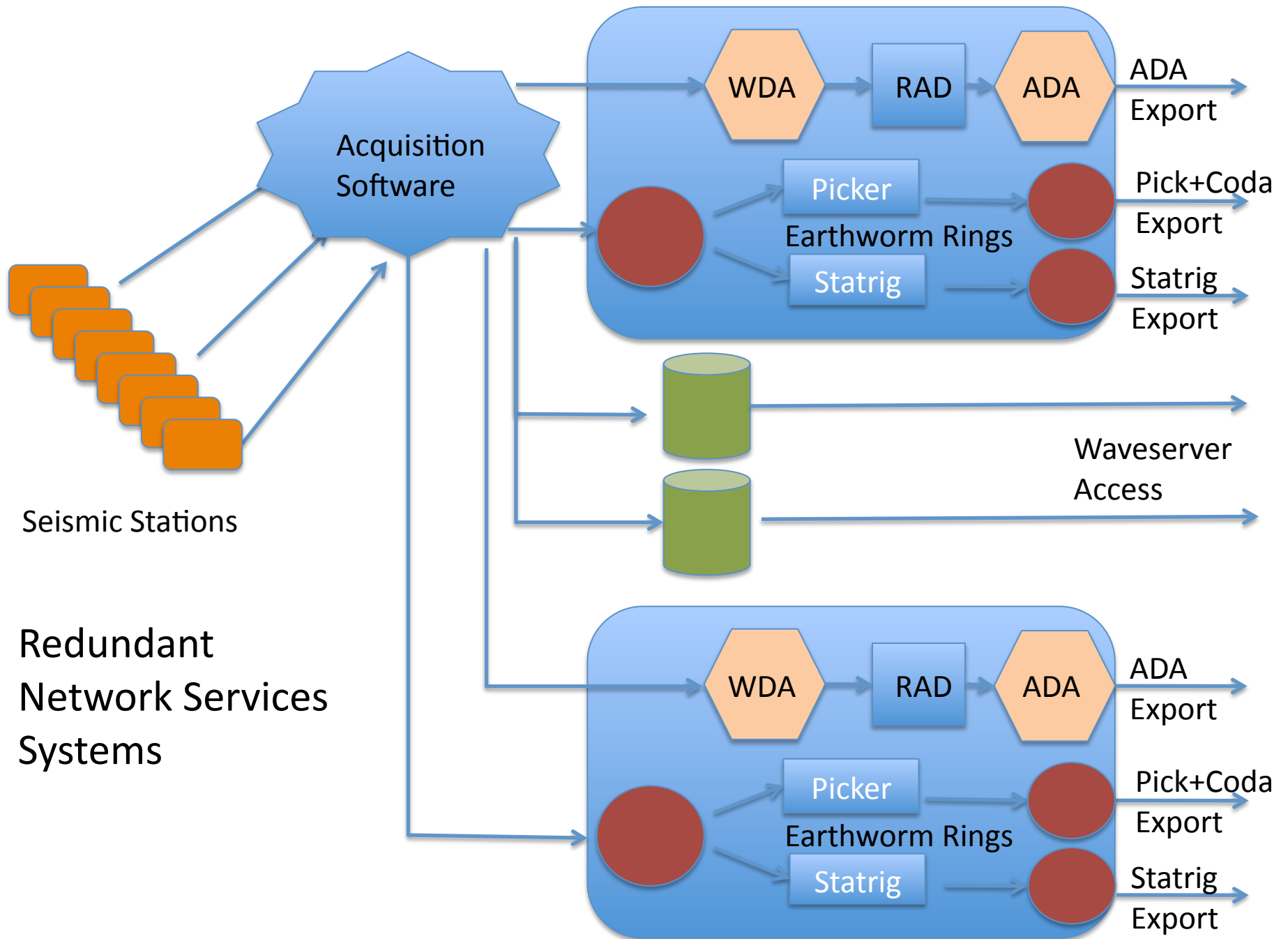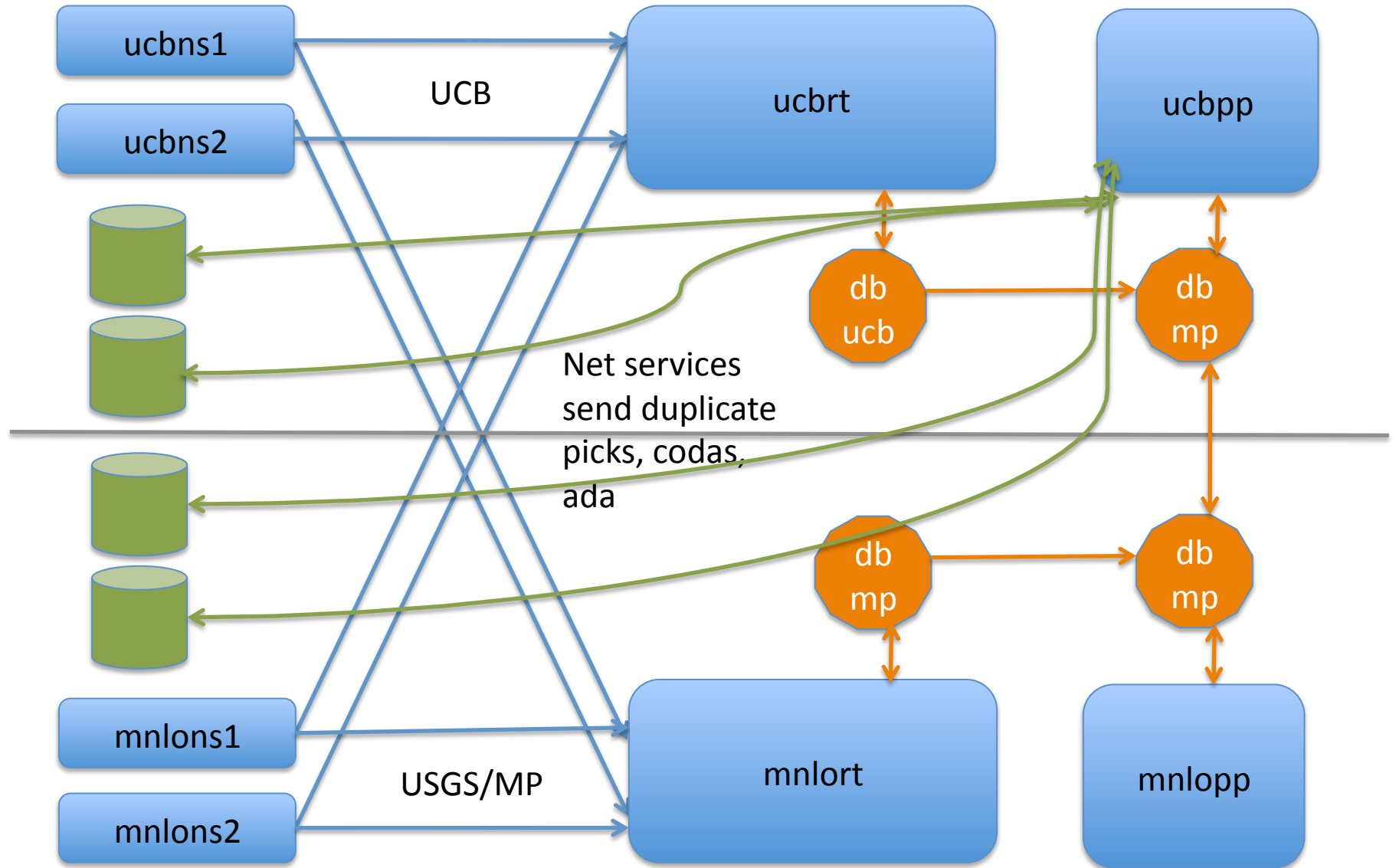# CISN-Wide Operations

- 24 broadband+sm stations throughout CA send continuous data directly to both NCEMC and SCEMC via frame relay.

- Waveform data exchange between NCEMC and SCEMC centers for stations near borders, and waveform data exchange with adjacent ANSS regional centers.

- Phase data exchanged between NCEMC and SCEMC.

- Access to remote waveservers for event waveform archiving.

CISN NCEMC Operations

- Use AQMS to implement a single distributed Earthquake Management Center (EMC) at 2 sites: UC Berkeley and USGS/MP.

  – Separate station telemetry and waveform acquisition system (and software).

  – Dedicated T1 circuits with Internet failover between EMC components at UCB and MP, but with insufficient bandwidth for FULL waveform exchange.

  – Full real-time system and RT database at each site.

  – Developed and utilize "Network Services" concept to provide distributed processing and redundancy.

Seismic Stations

Redundant
Network Services
Systems

Acquisition
Software

WDA → RAD → ADA → ADA Export

Picker → Pick+Coda Export

Earthworm Rings

Statrig → Statrig Export

Waveserver Access

WDA → RAD → ADA → ADA Export

Picker → Pick+Coda Export

Earthworm Rings

Statrig → Statrig Export

Utilizing Redundant Network Services in a Distributed AQMS System

ucbns1

ucbns2

UCB

ucbrt

ucbpp

db ucb

db mp

Net services send duplicate picks, codas, ada

db mp

db mp

mnlons1

mnlons2

USGS/MP

mnlort

mnlopp

Filters on RT systems remove/overwrite duplicate data