Introduction

This presentation discusses the prototype system for coupling NEMS and LIS-NEMS. A number of issues have to be considered when developing a coupled system for use in an Earth System Modeling Framework (ESMF). The coupling system must be able to perform inter-model and inter-component exchanges. This is particularly true for a system that aims to combine the strengths of both NEMS and LIS-NEMS. The ESMF redistribution scheme is important for ensuring that the coupled system runs smoothly. In this presentation, we will discuss the implementation of the ESMF redistribution scheme into the coupled system and show the results of the inter-model and inter-component exchanges.

Lower Level Coupling

At this level, the land physics is called for each grid point. The following variables are exchanged:
- Land surface properties
- Atmospheric boundary conditions
- Sea surface temperature
- Sea surface salinity
- Sea ice thickness
- Sea ice concentration

Higher Level Coupling

At this level, the fully gridded representation of the land surface is available and is the lowest level. The coupled system requires the following variables:
- Land surface properties
- Atmospheric boundary conditions
- Sea surface temperature
- Sea surface salinity
- Sea ice thickness
- Sea ice concentration

Implementation Issues

LIS and NEMS must be able to operate on different grids and different data representations. LIS and NEMS must be able to exchange data in a consistent manner. The following issues were encountered:
- Data format differences
- Differences in data representation
- Data quality differences

Conclusions and Future Work

The coupled system is able to operate on different grids and different data representations. The implementation of the ESMF redistribution scheme is important for ensuring that the coupled system runs smoothly. Future work will involve improving the implementation and resolving any remaining issues.