Fed GeoCloud-II 'GeoNode'

Merging Cloud and NOAA
IT Resources for Geospatial Services

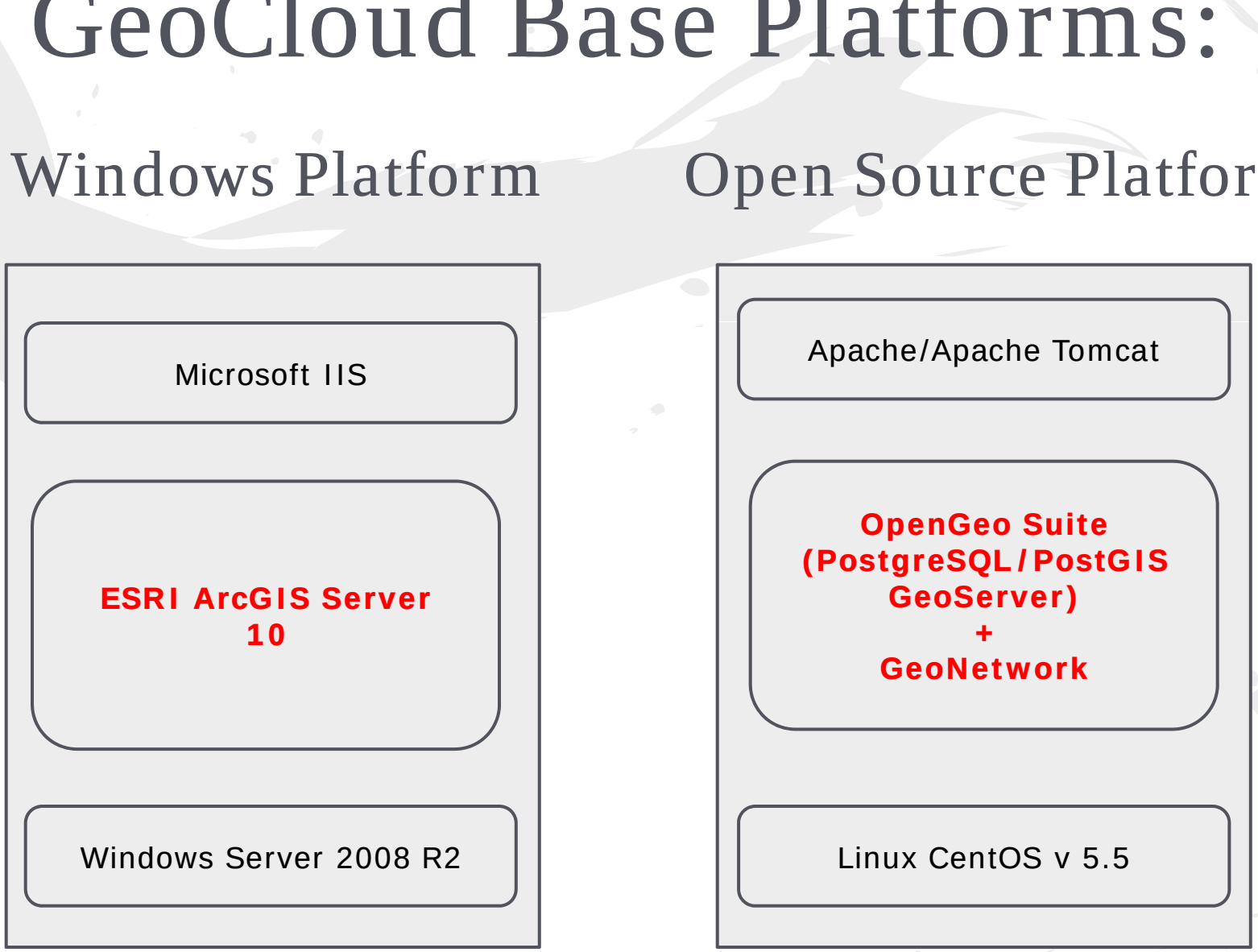
Project Background

- 2011 HPCC Research Project:
  'Enterprise GIS Web Services Hosting Environment for NOAA'
- Purpose:
  - Deploy Open Source geospatial software to WOC to allow NOAA data providers to easily publish data
  - Utilize existing NOAA resources and expertise
  - Prototype a system and prove a capability as well as the existence of an agency need

What is Fed GeoCloud?

- Interagency working group with goal to create cloud computing reference platforms and prototypes (PaaS/SaaS)
- Provides funding to operate AWS 'sandbox' infrastructure for platform development
- Select and deploy Federal agency geospatial applications on reference platforms
- Document best practices, lessons learned
- Provide a development to operations path

GeoCloud Base Platforms:

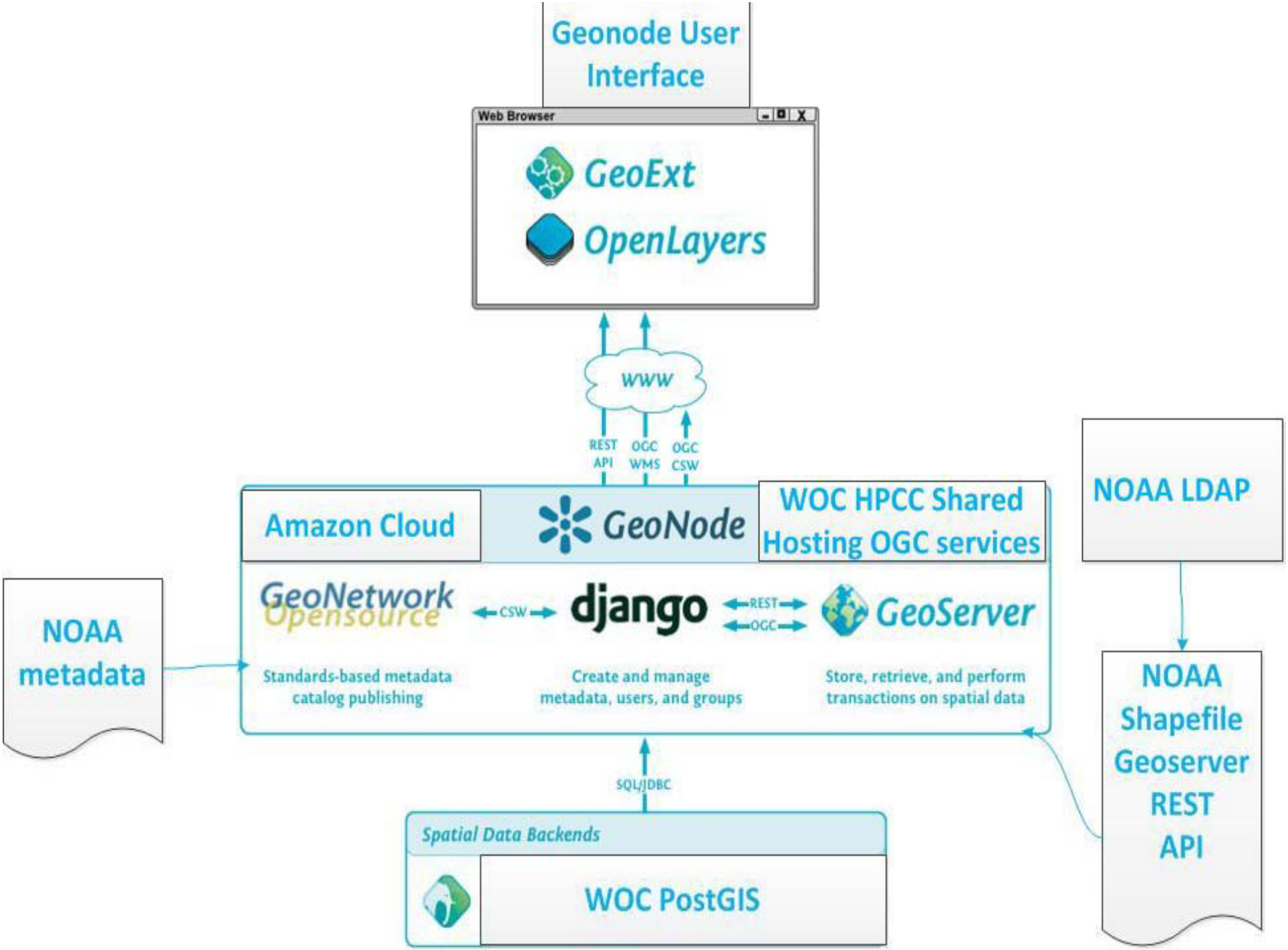


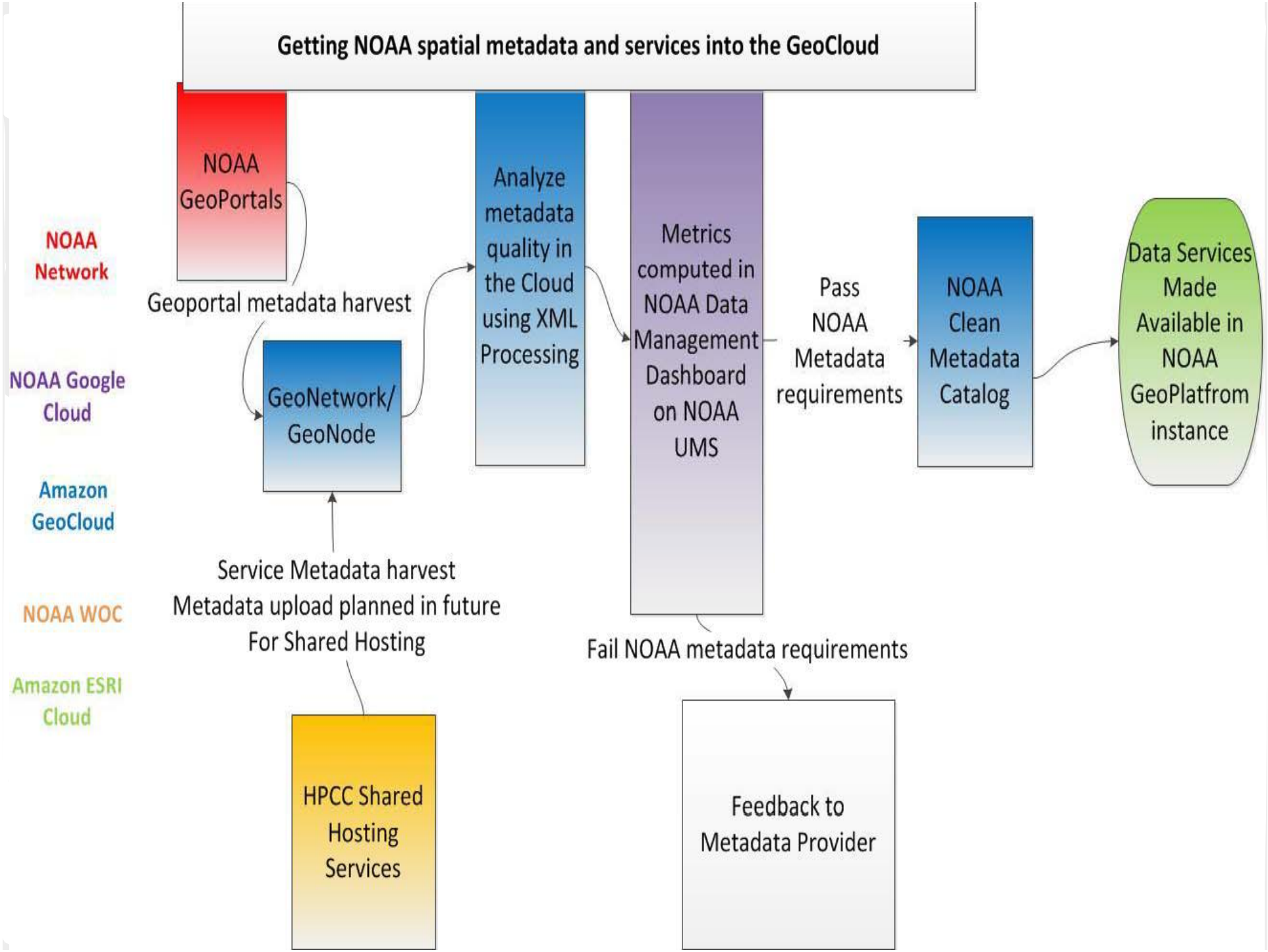
2012 GeoCloud Project: GeoNode

- GeoNode: Open Source SDI solution (geonode.org)
  - Investigate a hybrid approach of NOAA-hosting and cloud hosting to extend capabilities of HPCC pilot project
  - Open Source software: GeoNetwork/GeoNode
  - NOAA (WOC) hosting:
    - serve geospatial data via OGC services
  - GeoCloud hosting:
    - associated service metadata
    - provide front end and CS-W compliant service for user access to metadata and compliance with NOAA metadata catalog

Why a hybrid approach?

- Amazon/AWS can be a cost-effective option for certain use cases
- AWS cost increases based on usage:
  - bandwidth
  - I/O
  - data storage
- For OGC service hosting, optimal solution may be a hybrid where resource intensive data/service hosting is handled internally, while metadata/assoc services are cloud-hosted


Geonode User Interface
Web Browser
GeoExt
OpenLayers
www
REST API
OGC WMS
OGC CSW
Amazon Cloud
GeoNode
WOC HPCC Shared Hosting OGC services
NOAA LDAP
GeoNetwork Opensource
CSW
django
REST
OGC
GeoServer
NOAA metadata
Standards-based metadata catalog publishing
Create and manage metadata, users, and groups
Store, retrieve, and perform transactions on spatial data
NOAA Shapefile Geoserver REST API
SQL/JDBC
Spatial Data Backends
WOC PostGIS


Getting NOAA spatial metadata and services into the GeoCloud
NOAA Network
NOAA Google Cloud
Amazon GeoCloud
NOAA WOC
Amazon ESRI Cloud
NOAA GeoPortals
Geoportal metadata harvest
GeoNetwork/ GeoNode
Service Metadata harvest
Metadata upload planned in future
For Shared Hosting
HPCC Shared Hosting Services
Analyze metadata quality in the Cloud using XML Processing
Metrics computed in NOAA Data Management Dashboard on NOAA UMS
Fail NOAA metadata requirements
Feedback to Metadata Provider
Pass NOAA Metadata requirements
NOAA Clean Metadata Catalog
Data Services Made Available in NOAA GeoPlatfrom instance