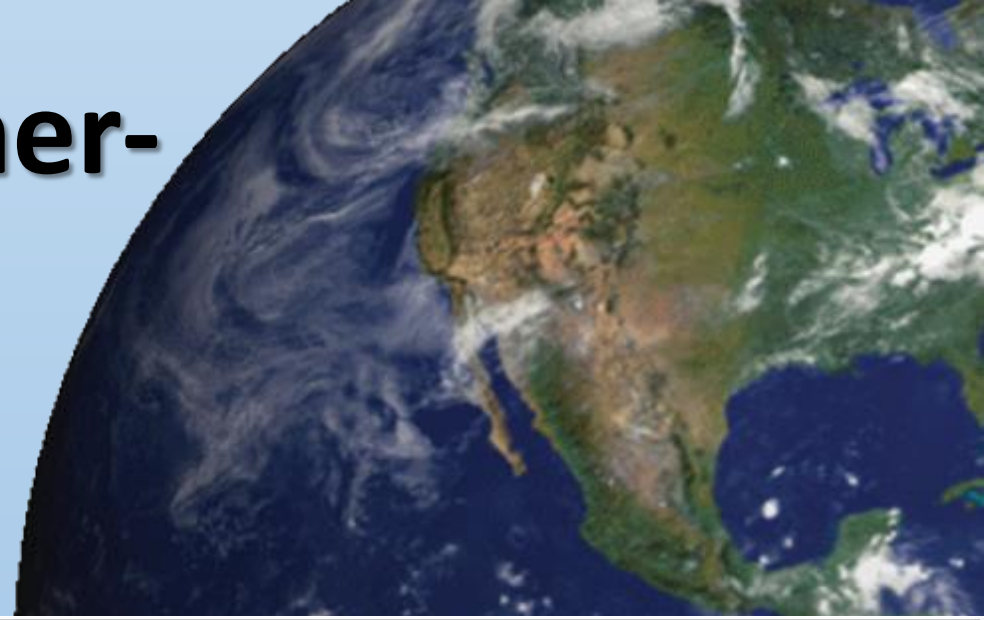


Building a Weather-Ready Nation



*Dissemination Technical Session
NWS Partners Meeting
July 18, 2016 • Tuscaloosa, AL*

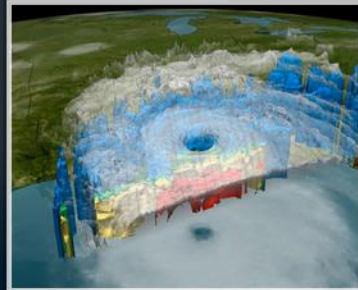
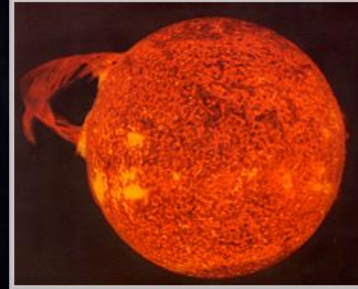
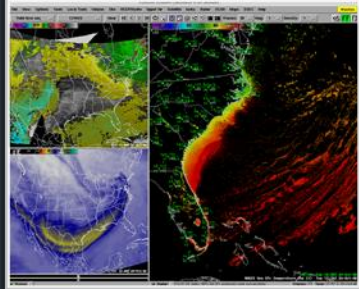




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- *Family of Services (FOS) Update*
- *Common Alert Protocol (CAP) Update*
- *MRMS and MADIS Upcoming Releases*
- *IDP Web/GIS Dissemination Services*
- *Open Data Initiative*



Integrated Dissemination Program (IDP)



Integrated Dissemination Program (IDP)

The Importance of NWS Dissemination



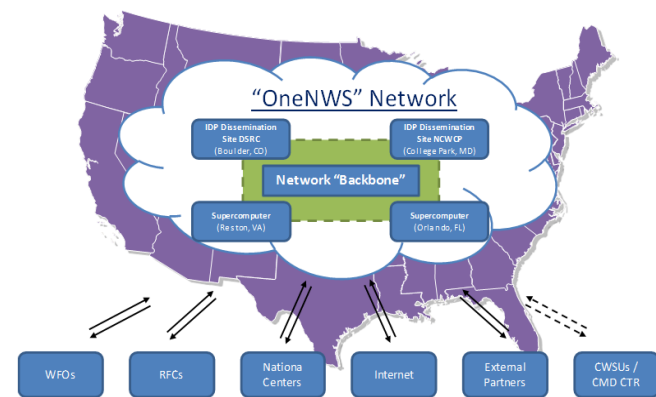
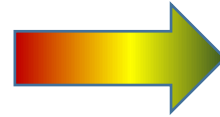
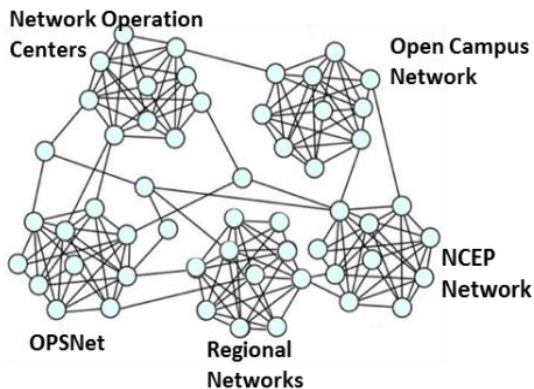
Integrated Dissemination Program (IDP) transforming NOAA's enterprise dissemination services including NWS' dissemination infrastructure to provide timely and reliable dissemination of weather, water, and climate data, forecasts and warnings supporting NWS' mission to protect life and property and enhance the national economy

A Typical Year Brings

| | | |
|--|---|---|
|  6 Hurricanes |  1270 Tornadoes |  5000 Floods |
|  10,000 Violent Thunderstorms |  Drought Conditions |  500 Deaths 5000 Injuries \$14B in Losses |

Office of Dissemination: Thrust Areas

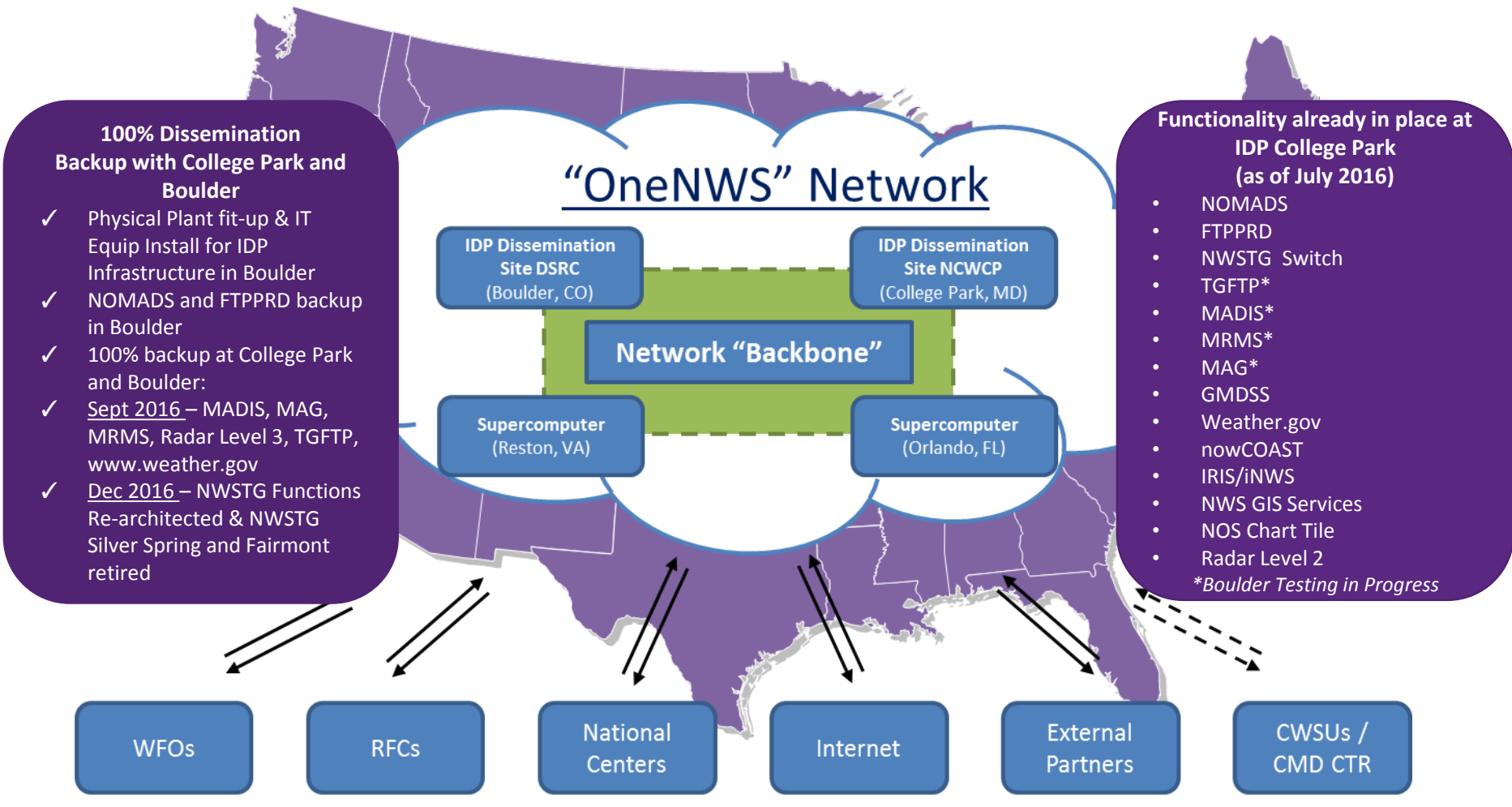
- **Service 1:** Dissemination IT Infrastructure & Virtualized Application Services
- **Service 2:** Terrestrial and Satellite Networking Services
- **Service 3:** Weather Information Distribution Services





Integrated Dissemination Program (IDP)

OneNWS Network Long-Term Sustainable Solution



100% Dissemination Backup with College Park and Boulder

- ✓ Physical Plant fit-up & IT Equip Install for IDP Infrastructure in Boulder
- ✓ NOMADS and FTPPRD backup in Boulder
- ✓ 100% backup at College Park and Boulder:
- ✓ Sept 2016 – MADIS, MAG, MRMS, Radar Level 3, TGFTP, www.weather.gov
- ✓ Dec 2016 – NWSTG Functions Re-architected & NWSTG Silver Spring and Fairmont retired

Functionality already in place at IDP College Park (as of July 2016)

- NOMADS
- FTPPRD
- NWSTG Switch
- TGFTP*
- MADIS*
- MRMS*
- MAG*
- GMDSS
- Weather.gov
- nowCOAST
- IRIS/iNWS
- NWS GIS Services
- NOS Chart Tile
- Radar Level 2

**Boulder Testing in Progress*

The future OneNWS Network will consolidate all operational networks (OPSnet, Regional, etc.) as single managed network under NCEP Central Operations (NCO).





NWS Telecommunication Gateway (NWSTG) Re- Architecture



NWSTG and the Transition to IDP



- NWS Telecommunications Gateway (NWSTG)
 - The Legacy NWSTG is systems located at Silver Spring, MD and Fairmont, WV
 - The design and IT complexity of the applications on the legacy NWSTG became unsustainable
 - IDP is addressing the weaknesses of the legacy NWSTG system
- IDP NWSTG Re-architecture Project
 - The objective of the NWSTG Re-architecture project is the migration of the Legacy NWSTG functions (Silver Spring, MD and Fairmont, WV) to the IDP operational infrastructure (College Park, MD and Boulder, CO)
 - Goal is to provide scalable, robust, secure and commonly shared dissemination IT infrastructure and distribution services to help protect life and property



NWSTG Transition Approach to IDP Status: July 2016



Legacy NWSTG System

Fairmont

7/31/2016:
complete removal
of all IT equipment



Silver Spring

- RADAR 3*
- FTP Push
- Socket
- FTP Mail
- HF-FAX
- WNG
- SNOTEL
- FTP incoming*
- EDIS
- HCE*
- HCL
- NIDS
- GISC
- HADS
- FOS

Step 1

IDP System

College Park

- TGFTP
- BMT
- NLETS
- GMDSS
- RADAR 2
- Weather.gov
- Core Switch
- FTSP
- TGGATE
- SFTP
- FNMOC
- SPOT
- RADAR 3*
- HCE*
- FTP Incoming*

Boulder

- TGFTP*

Step 2

*Testing in progress

Step 1: Transition NWSTG Silver Spring, MD, software applications to IDP College Park, MD

Step 2: Enable NWSTG software application to run at IDP College Park, MD, or IDP Boulder, CO, providing 100% backup capabilities by end of December 2016

Step 3: Retire NWSTG Silver Spring, MD





Family of Services (FOS)

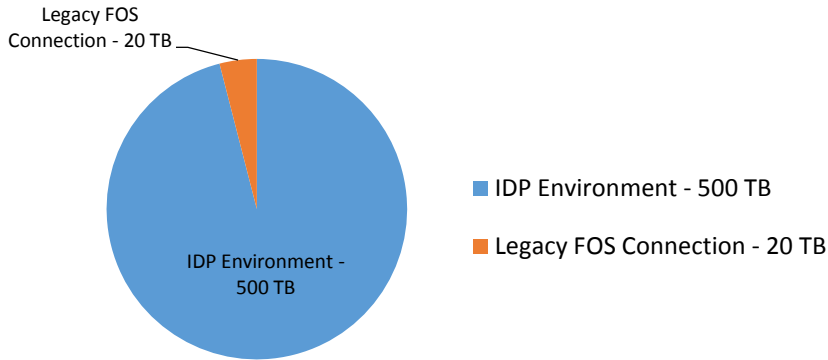


Family of Services (FOS) Update

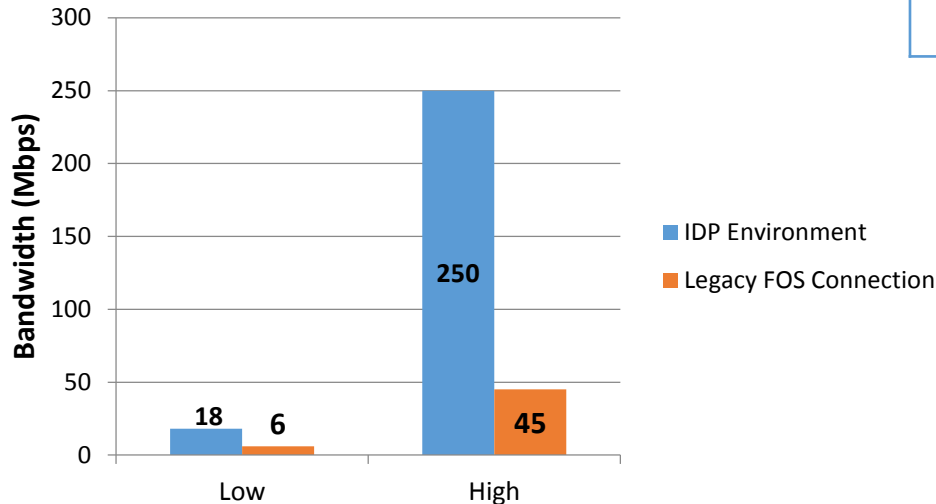
IDP and FOS Data Services



Available Data (TB)



Typical Message Throughput per FTP Session



| NWS Dissemination | IDP | FOS |
|---|-----------------------------------|---|
| 100% Backup | Yes (FY17Q1) | No |
| Single Points of Failure | No | Yes |
| Meets security statutes & Policy | Yes | No - Violates FISMA, OMB 08-05 (TIC), and NOAA / NWS directives |
| Network capacity at Internet boundary | 20Gbps (scalable to 100Gbps) | 1Gbps |
| Typical message throughput per FTP session for FOS | 18 Mbps – 250 Mbps | 6 Mbps – 45 Mbps (HIGH estimate based on circuit size) |
| Uptime availability | 99.0% (without backup capability) | 99.9% |

Data and services on IDP include:

- All resolutions for GFS including 0.25 degree
- HRRR, GEFS, SREF etc.
- MADIS
- MRMS
- www.weather.gov
- GIS
- NOMADS for customized gridded model products
- Plus all NWSTG/FOS applications (RADAR Level 3 - July 2016)



Family of Services (FOS) Update

IDP System Design Approach



- IDP Dissemination Private Clouds enables resilient, scalable and secure enterprise dissemination services
 - Designed with internal redundancy
 - Blade and enclosure redundancy with highly available network attached storage
 - Diverse network paths with carrier grade network cores
 - Uses virtualized technology to improve resource utilization
 - Virtual machines highly availability and scalability
 - Services are decoupled to improve robustness
 - Ingest, Processing, and Database Services
 - Web Services (HTTP) and Dissemination Services (FTP, LDM, etc)
- 100% Backup capability
 - Provide geographically diverse backup capability for all applications and services in College Park and Boulder
 - By December 2016, operational applications on IDP will have 100% backup capability



Family of Services (FOS) Update FY15 / FY16 Timeline



TRANSITION TIMELINE

| Jan 2015 | Aug 2015 | Jan 2016 | Feb 2016 | Mar 2016 | Apr – Jun 2016 |
|--|---|--|--|--|---|
| AMS Partners Briefing IDP Overview along with plans to transition away from direct connection | NWS formal request for comments on the alteration of the FOS program through Oct 2015 | AMS Partners Briefing Status report on IDP and reiterated transition plans from direct connection | 2/12/2016: Face to face meeting between NWS Leadership and FOS Partners | Monthly Technical Interchange Meetings begin in support transition from TGDATA and RADAR Level 3 | FOS testing of TGDATA and confirmation of IDP access for RADAR Level 3 data |
| | | Jul 2016 | Aug 2016 | Sep 2016 | |
| | | Start of 30-day test of RADAR Level 3 data from IDP College Park | Continue RADAR Level 3 testing & TGFTP and RADAR Level 3 on IDP Boulder | <ul style="list-style-type: none"> Failover testing between IDP College Park and Boulder for TGFTP and RADAR Level 3 100% backup capability Turn off dedicated path between FOS partners and OPSnet on Sep 30, 2016 | |

TRANSITION TIMELINE



Family of Services (FOS) Update

Transitioned TGDATA to IDP TGFTP



As part of the continuing **NWS Telecommunications Gateway (NWSTG)** application transition to IDP, NCEP transitioned the public **anonymous ftp services** from the legacy systems in Silver Spring, MD to the IDP environment in College Park, MD.

This ftp server also fulfills international commitments for data distribution and, most importantly, the migrated application provides backup service capabilities for the first time.

All data on TGDATA (NWSTG FOS Server name) transitioned to TGFTP on IDP

TGFTP Capabilities

- Access to a variety of weather products including climate data, forecasts, observations, watches and warnings
- 100% backup capability (by September 2016)
- Public access

Index of /data

| Name | Size | Date Modified |
|----------------------|---------|----------------------|
| [parent directory] | | |
| climate/ | | 3/24/15, 12:00:00 AM |
| forecasts/ | | 3/24/15, 12:00:00 AM |
| hurricane_products/ | | 3/24/15, 12:00:00 AM |
| ls_SS_services | 33.1 MB | 5/19/15, 12:00:00 AM |
| marine/ | | 7/17/16, 12:26:00 PM |
| observations/ | | 3/24/15, 12:00:00 AM |
| products/ | | 3/24/15, 12:00:00 AM |
| public_statement/ | | 3/24/15, 12:00:00 AM |
| raw/ | | 1/28/16, 9:30:00 AM |
| records/ | | 3/24/15, 12:00:00 AM |
| summaries/ | | 3/24/15, 12:00:00 AM |
| watches_warnings/ | | 3/24/15, 12:00:00 AM |
| zonecatalog.curr/ | | 6/30/15, 12:00:00 AM |
| zonecatalog.curr.tar | 15.5 MB | 6/7/07, 12:00:00 AM |

TGFTP is available at: <ftp://tgftp.nws.noaa.gov/>





Family of Services (FOS) Update

RADAR Level 3 on IDP



Site Status as of 07.13.2016 wed 03:14:58 utc

SITES - last receipt of data from

no latency latency > 10 mins latency > 25 mins (operator notes available) latency > 25 mins (no operator notes)

RPG

| | | | | | | | | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| KABR | KABX | KAKQ | KAMA | KAMX | KAPX | KARX | KATX | KBBX | KBGM | KBHX | KBIS | KBLX | KBMX | KBOX | KBRO |
| 03:08:48 | 03:10:53 | 03:14:23 | 03:11:42 | 03:14:24 | 03:13:35 | 03:10:43 | 03:13:33 | 03:05:57 | 03:05:51 | 03:10:53 | 03:11:46 | 03:13:20 | 03:08:15 | 03:13:23 | 03:09:54 |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| KRBU | KBTX | KCAE | KCBW | KCBX | KCCX | KCLE | KCLL | KCRP | KCIV | KDAX | KDDZ | KDFX | KDGI | KDX | |
| 03:12:24 | 03:12:24 | 03:11:39 | 03:10:21 | 03:08:02 | 03:14:23 | 03:12:24 | 03:06:35 | 03:12:12 | 03:11:45 | 03:12:35 | 11:37:49 | 03:06:20 | 03:12:49 | 03:05:39 | |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/12/16 | 07/13/16 | 07/13/16 | 07/13/16 | |
| KDLH | KDMX | KDOX | KDTX | KDVN | KDYX | KEAX | KEMX | KENX | KEOX | KEPZ | KESX | KEVX | KEWX | KEYX | KFCX |
| 03:14:42 | 03:14:21 | 03:14:12 | 03:11:11 | 03:12:55 | 03:12:48 | 03:14:48 | 03:07:02 | 03:14:44 | 03:13:34 | 03:05:07 | 03:06:41 | 03:13:30 | 03:14:24 | 03:08:18 | 03:13:05 |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| KFRD | KFDX | KFFC | KFSF | KFSX | KFTG | KFWS | KGGW | KGLX | KGLD | KGRB | KGRK | KGRR | KGSP | KGWX | KGYX |
| 03:14:44 | 03:13:18 | 03:12:29 | 03:14:04 | 03:11:49 | 03:12:33 | 03:06:29 | 03:13:50 | 03:11:05 | 03:11:48 | 03:14:04 | 03:11:16 | 03:13:26 | 03:13:28 | 03:13:48 | 03:06:45 |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| KHDX | KHGX | KHMX | KHPX | KHTX | KICT | KICX | KILN | KILX | KIND | KIKX | KIWA | KIWX | KJAX | KJGX | KJHL |
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| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| KLBB | KLCH | KLGX | KLIX | KLNX | KLOT | KLRX | KLSX | KLTX | KLWX | KLZK | KMAF | KMAX | KMBX | KMHX | |
| 03:11:37 | 03:13:52 | 03:11:38 | 03:14:23 | 03:11:35 | 03:10:23 | 03:14:07 | 03:12:58 | 03:12:16 | 03:12:51 | 03:14:26 | 03:14:47 | 03:07:55 | 03:13:06 | 03:13:30 | 03:13:38 |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| KMKX | KMLB | KMOB | KMPX | KMQT | KMRX | KMSX | KMTX | KMUX | KMWX | KMXK | KNOX | KNOA | KOAX | KOHX | KOKX |
| 03:08:12 | 03:11:53 | 03:11:47 | 03:11:17 | 03:07:35 | 03:06:32 | 03:14:36 | 03:07:57 | 03:09:31 | 03:13:12 | 03:13:30 | 03:06:05 | 03:11:02 | 03:10:00 | 03:08:35 | 03:12:50 |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| KOTX | KPAH | KPEZ | KPDT | KPOE | KPWX | KRAK | KRSX | KRWX | KRLX | KRTX | KSPX | KSGF | KSHV | KSTJ | KSOX |
| 03:14:44 | 03:14:04 | 03:06:25 | 03:11:31 | 03:09:24 | 03:14:10 | 03:13:03 | 03:12:26 | 03:14:24 | 03:09:06 | 03:14:35 | 03:13:38 | 03:13:17 | 03:10:53 | 03:08:18 | 03:06:27 |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| KSRX | KTBW | KTFX | KTLH | KTLX | KTWX | KTYX | KUDX | KUEX | KVAX | KVBX | KVNX | KVTX | KVWX | KYUX | PABX |
| 03:10:47 | 03:13:05 | 03:10:48 | 03:14:28 | 03:07:55 | 03:11:05 | 03:13:18 | 03:08:09 | 03:12:41 | 03:10:51 | 03:13:42 | 03:05:28 | 03:08:28 | 03:11:54 | 03:11:21 | 03:13:41 |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| PACG | PAEC | PAHG | PAIH | PAKC | PAPD | PGUA | PHKI | PHKM | PHMO | PHWA | TJUA | | | | |
| 03:13:58 | 03:14:23 | 03:14:06 | 03:10:33 | 03:12:09 | 03:10:34 | 03:13:26 | 03:13:04 | 03:10:38 | 03:14:30 | 03:13:42 | 03:11:35 | | | | |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | | | | |

SPG

| | | | | | | | | | | | | | | | |
|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| TADW | TATL | TBNA | TBOS | TBWI | TCLY | TCMH | TCVG | TDAL | TDAY | TDCA | TDEN | TDFW | TDTW | TEWR | TFLL |
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| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| THOU | TIAD | TIAH | TICH | TIDS | TJFK | TLAS | TLVE | TMCI | TMCO | TMDW | TMEM | TMLA | TMKE | TMSP | TMSY |
| 03:11:41 | 03:12:18 | 03:13:23 | 03:11:57 | 03:14:14 | 03:13:02 | 03:09:21 | 03:12:47 | 03:12:33 | 03:13:08 | 03:14:36 | 03:09:07 | 03:14:12 | 03:13:52 | 03:10:23 | 03:11:11 |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 |
| TKOK | TORD | TPBI | TPHL | TPHX | TPIT | TRDU | TSDF | TSJU | TSLC | TSTL | TTPA | TTUL | | | |
| 03:09:13 | 03:13:20 | 03:13:54 | 03:09:16 | 03:12:01 | 03:11:56 | 03:10:21 | 03:14:11 | 14:02:58 | 03:09:23 | 03:10:44 | 03:13:05 | 03:10:05 | | | |
| 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | 05:05:16 | 07/13/16 | 07/13/16 | 07/13/16 | 07/13/16 | | | |

03:15 utc » 199 sites up (99%) » 201 sites monitored

Messages From Radar Sites

please click [here](#) to read the messages received within the last 24 hours

Radar Level 3 Migration Status

- 30-day test began on June 29, 2016
- Customers currently evaluating the data
- Feedback to date:
 - Products are being received quicker on the IDP (13 seconds) than through FOS method (18 seconds)
- RADAR Level 3 operational on IDP Aug 9, 2016
- Radar Level 3 will be available on IDP Boulder system by September
- Failover testing between College Park and Boulder will occur in September

The latest Radar Level III data is available at: <ftp://tgftp.nws.noaa.gov/SL.us008001/DF.of/DC.radar/>
<http://radar3pub.ncep.noaa.gov/>





Family of Services (FOS) Update

IDP Overall Management Approach



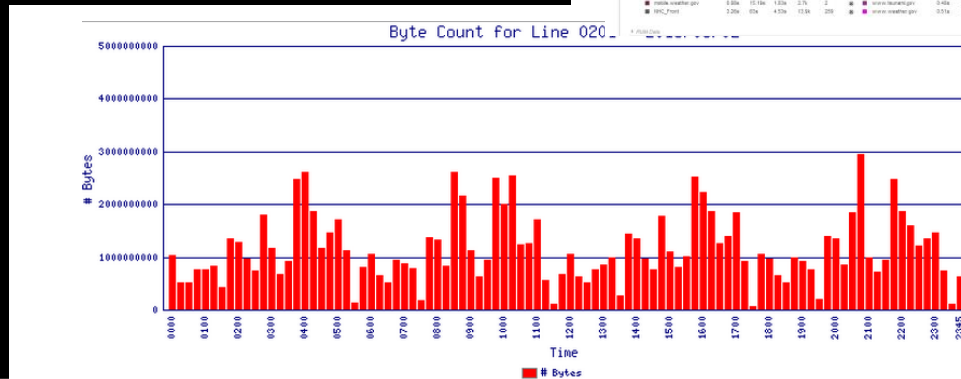
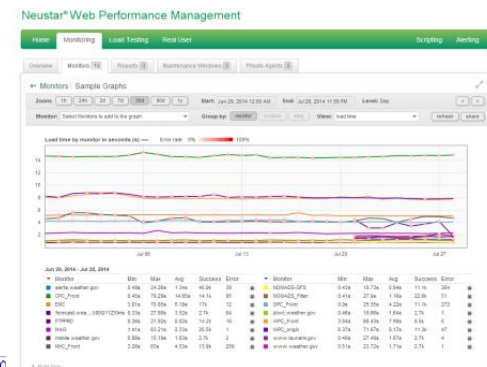
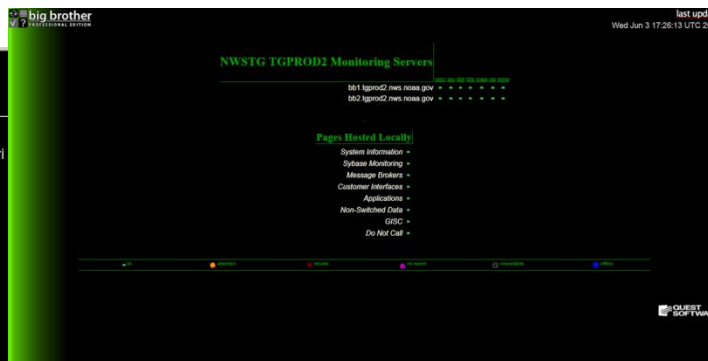
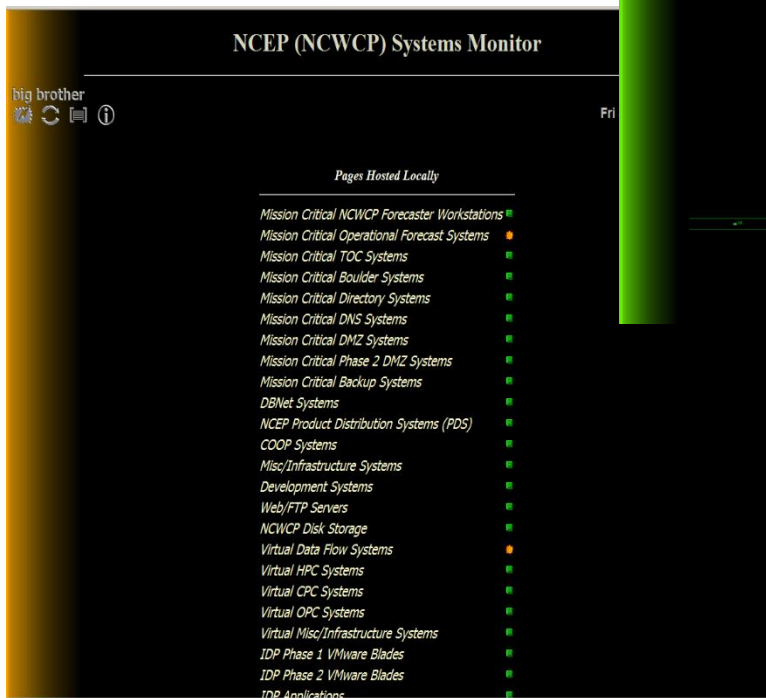
- Single, accountable organization (NCO) managing the monitoring and performance of a technically robust system
- Defined, repeatable 7/24 operational support including improved monitoring and problem resolution processes
- Improved reliability using mature configuration management, security patching and applications onboarding processes

Family of Services (FOS) Update

IDP Continuous Monitoring Procedures

What metrics do we monitor?

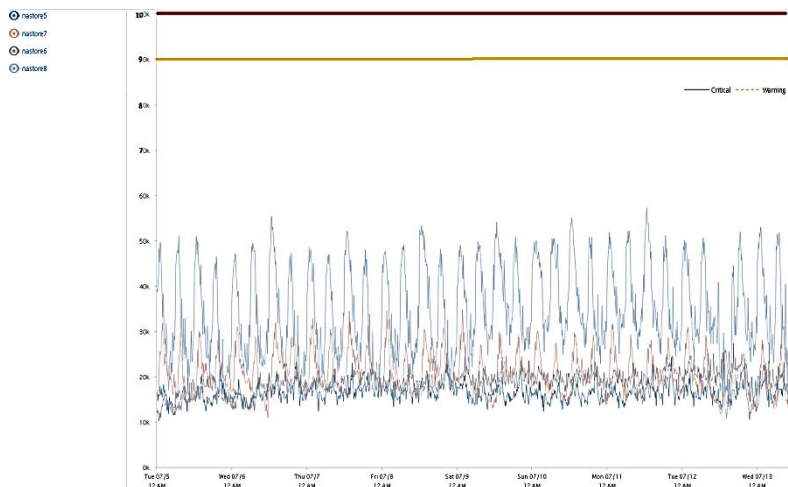
- Uptime – 99% today / 99.9% with full backup capability
- Download speed – application dependent
- Website Load time – application dependent
- Network – use Scrutinizer monitoring tool for inbound / outbound traffic
- Data Ingest - monitor data counts



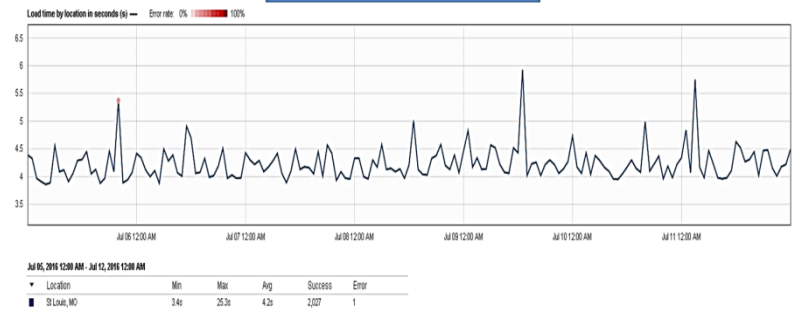
What metrics do we monitor?

- I/O Bandwidth – monitor at the system level
- CPU Utilization – monitor at the system and application level
- Latencies – application and services based
- Weekly averaged load time at locations across the U.S.
- Weekly averaged download time at locations across the U.S.

College Park - IOPS



MAG Speed Test – July 5 - 12
Average load time : 4.2s



NCEP Central Operations defines theoretical maximums and procurement points for all critical resources and review them on a weekly basis



Family of Services (FOS) Update

IDP Escalation Procedures



Reporting / Escalation Procedures are unchanged
301-713-0902 / TOC.nwstg@noaa.gov or SDM@noaa.gov

Ben Kyger, NCO Director,
Ben.Kyger@noaa.gov

- 24x7 Tier I coverage ranging from 6 – 12 team members on shift at any one time for operational monitoring of critical NWS systems, applications, and data
- If multiple calls are received at the same time...calls are automatically transferred to another staffed desk
- Once an issue is reported, a ticket is opened immediately for tracking purposes and Tier II staff is contacted within minutes based on Standard Operating Procedures



Common Alert Protocol (CAP)



Common Alerting Protocol (CAP) Update *Background*



- CAP allows emergency messages to be simultaneously disseminated over a wide variety of existing and emerging public alerting systems
- In addition to the basic CAP standard, a supplemental Integrated Alert and Warning System (IPAWS) Profile technical specification was developed to ensure compatibility with existing warning systems used in the United States
- FEMA has formally adopted CAP v1.2 and the IPAWS Profile to implement IPAWS
- Systems that use CAP:
 - Emergency Alert System (EAS)
 - Participants include radio, TV, cable, broadcast, satellite, and wireline providers
 - Participants were required to upgrade their equipment to be able to receive CAP alerts under FCC rules
 - Wireless Emergency Alerts (WEAs)
 - Transmitted to the IPAWS-Open Platform for Emergency Networks (OPEN) in CAP format
- **In the Spring 2016, NWS Senior Management was made aware of software bugs contained in CAP v1.2**

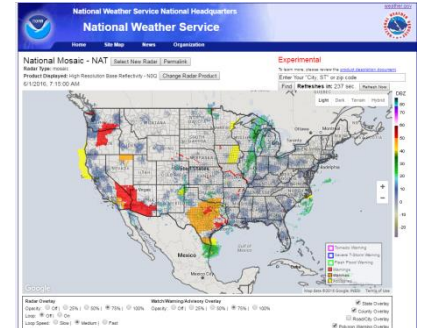


Common Alerting Protocol (CAP) Update



Phase 1 – Post-Processed CAP

This “post-processed” method is a stop gap approach for support of the FEMA/IPAWS Wireless Emergency Alerts channel, a permanent CAP origination capability will be implemented in AWIPS Hazards Services



- **Phase 1 – addressing the bugs includes:**

- WMO Products and headlines are not parsed correctly and/or data is missing in output resulting in over warning for some Flash Floods
- CAP message does not properly display precautionary/preparedness information that is listed in the WMO message resulting in incorrectly placed product content
- Alerts are not distributed or are inadequately distributed for some watch, warning, advisories that have multi-line VTEC codes
- The CAP messages do not contain all the WMO-formatted parameter elements resulting in not being able to always reproduce headlines and other data currently in the WMO products from CAP v1.2

Corrections for these known data/message defects will be implemented by FY17 Q2.



Common Alerting Protocol (CAP) Update



Phase 2 – Hazards Services Generated CAP

Hazard Services

- Produce Hydrologic related hazards using a new framework that replaces the capabilities that reside within AWIPS WarnGen , GHG, and RiverPro applications
- Implement new capabilities to generate hazards more effectively / efficiently

Benefits/Highlights:

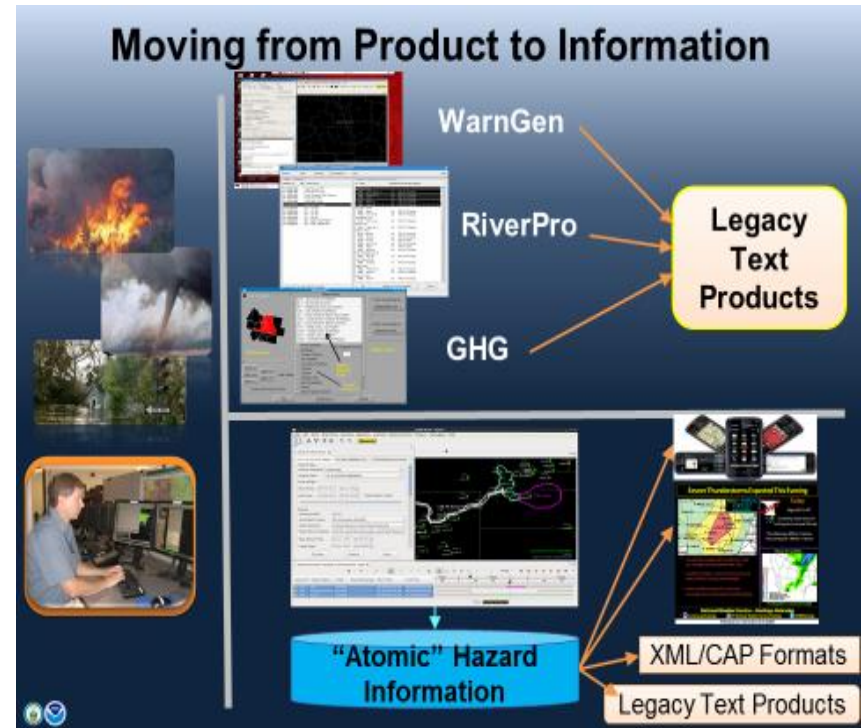
- Streamlines the hydro warning process within the forecast office
- Enables modern communications protocol (e.g., CAP, XML, etc.), and future capabilities (e.g., Probabilistic Hazards, Hazard simplification)
- Reduces the cost of O&M for the watch, warning and advisory applications

Hazard Services Tentative Schedule

- Framework and Hydrologic Products deployment in 2019
- Remaining Products between 2019 and 2020

Potential Transition to Hazard Services CAP messages

- Hydrologic products in 2019
- Remaining watches and warnings in 2020
- Decommissioning of the “post processing” method in 2021





Upcoming MRMS & MADIS Releases

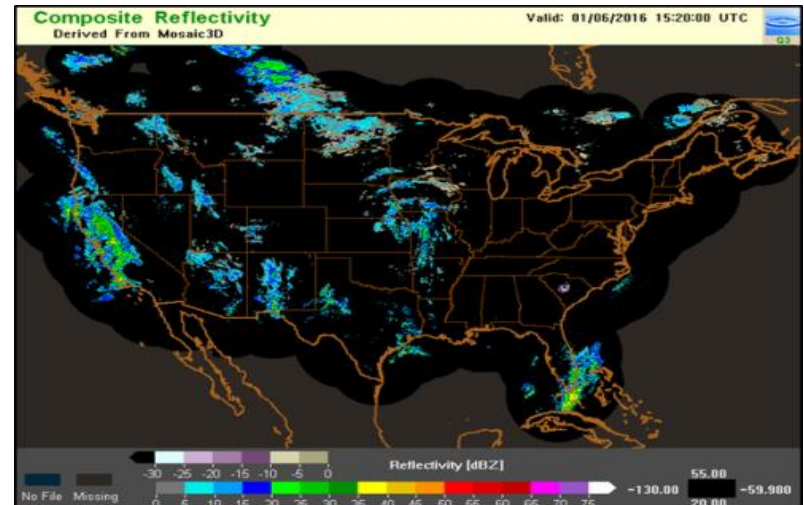
MRMS v11.0.0 (FY16 Q4)

The MRMS system was developed to produce severe weather and precipitation products for improved decision-making capability for severe weather forecasts and warnings, hydrology, aviation, and numerical weather prediction.

Additions and updates for v11.0.0 include:

- infrastructure efficiencies
- lightning product enhancements
- improved gauge data ingest and quality control
- RIDGE2 support
- MDL's AutoNowCaster

v11.5.0 (FY17Q2) and v12.0.0 (FY17Q4) are planned for next year.



Partners can request a subscription service to MRMS, via LDM, at any time.

Have a question or need help getting started? Send an email to ncep.list.idp_support@noaa.gov with the subject line "MRMS LDM request".

MADIS v2.1.5 (FY17 Q1) – Full *Clarus* functionality

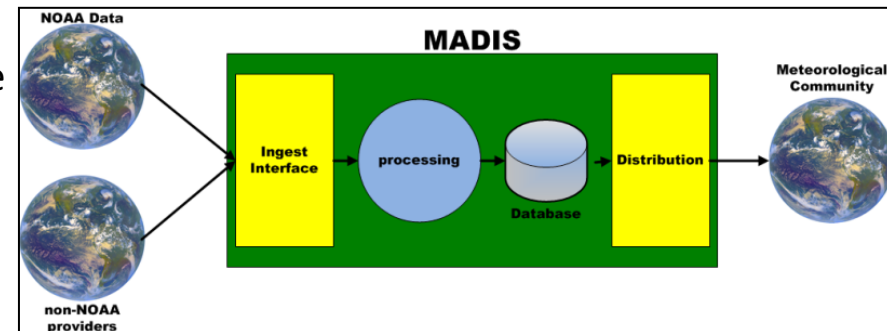
MADIS is a meteorological observational database and data delivery system that provides observations that cover the globe.

Updates in v2.1.5 include:

- Clarus is a research and development initiative to demonstrate and evaluate the value of “Anytime, Anywhere Road Weather Information” provided by both public agencies and the private weather enterprise to transportation users and operators.
 - Federal Highway Administration (FHWA), NWS, and the Office of Oceanic and Atmospheric Research (OAR) agreed that MADIS should become the operational home for Clarus.
- Version 2.1.5 also includes HADS and SNOTEL processing migrated from the NWS Telecommunications Gateway system.

Partners can request a subscription service to MADIS, via LDM, at any time.

Have a question or need help getting started? Send an email to madis-support@noaa.gov with the subject line "Clarus transition".





IDP Web/GIS Dissemination Services



Available IDP Dissemination Services

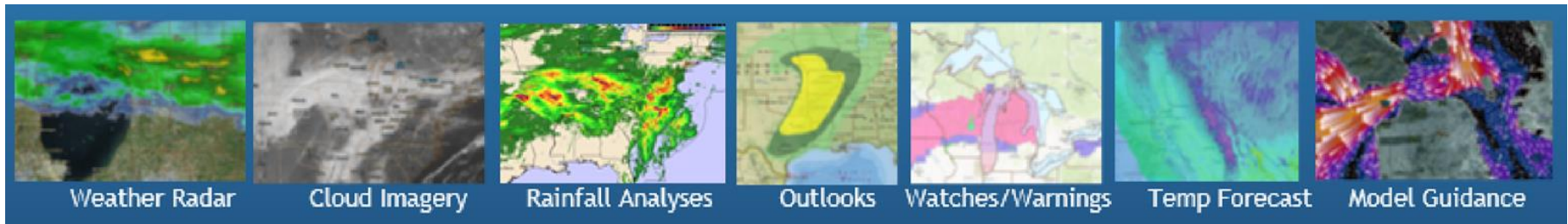
IDP Web and Geospatial Services (GIS)



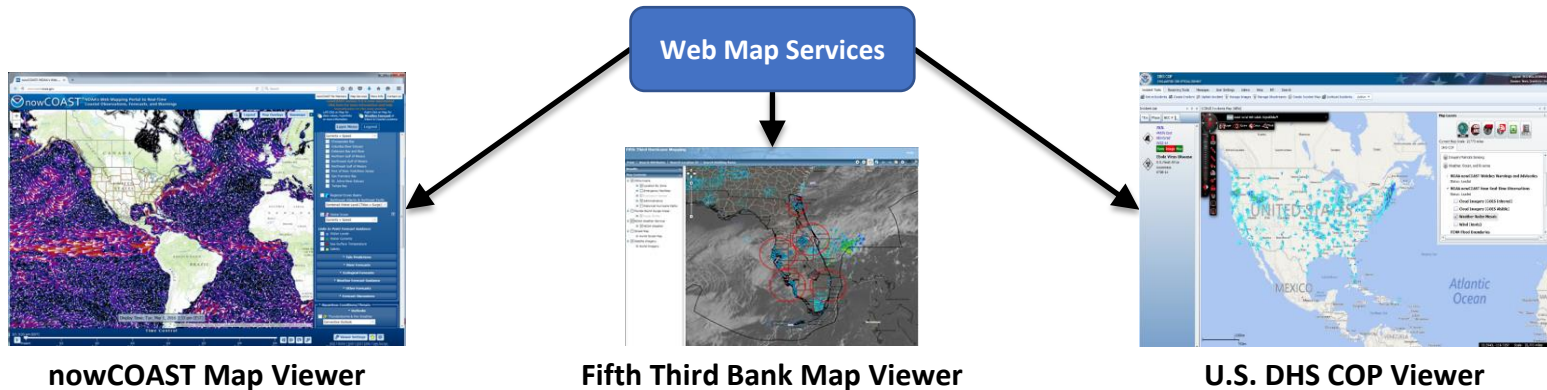
- **Standup and Maintain an Enterprise GIS Infrastructure**
 - Leveraging web services and GIS to disseminate NOAA and NWS critical data to forecasters, NOAA users, Federal partners (Federal Aviation Administration (FAA) and Federal Emergency Management Agency (FEMA)), International community and public
 - Implementing net-centric weather information dissemination capability to fulfill NWS' role for the Next Generation Air Traffic System (NextGen)
 - Onboarding current GIS capabilities onto operational dissemination infrastructure
 - Establishing common format framework for operating GIS data sets
- **Establishing consistent metadata and a consolidated catalog for discovery and access of NOAA and NWS geospatial content**



- Provides users with situational awareness/coastal intelligence of the recent past, present, & future environmental conditions for the United States
- Integrates near-real-time data, analyses, warnings, forecasts, and model guidance from NOS, NWS, NESDIS, and other federal agencies



- Provides these data & information via REST map services & OGC compliant WMS





Available IDP Dissemination Services

IDP GIS – Climate Hazards



idpgis.ncep.noaa.gov/arcgis/rest/services

ArcGIS REST Services Directory

[Home](#) > [services](#)

[JSON](#) | [SOAP](#)

Folder: /

Current Version: 10.22

View Footprints In: [ArcGIS.com Map](#)

Folders:

- [NMFS](#)
- [NOAA](#)
- [NOS](#)
- [NOS Biogeo Biomapper](#)
- [NOS ESI](#)
- [NOS Observations](#)
- [NWS](#)
- [NWS Climate Outlooks](#)
- [NWS Forecasts Guidance Warnings](#)
- [NWS Observations](#)
- [Utilities](#)

Services:

None

Supported Interfaces: [REST](#) [SOAP](#) [Sitemap](#) [Geo Sitemap](#)

idpgis.ncep.noaa.gov/arcgis/rest/services/NWS_Climate_Outlooks/cpc_weather_hazards/MapServer

ArcGIS REST Services Directory

[Home](#) > [services](#) > [NWS Climate Outlooks](#) > [cpc_weather_hazards \(MapServer\)](#)

[JSON](#) | [SOAP](#) | [WMS](#)

NWS_Climate_Outlooks/cpc_weather_hazards (MapServer)

View In: [ArcGIS JavaScript](#) [ArcGIS.com Map](#) [Google Earth](#) [ArcMap](#) [ArcGIS Explorer](#)

View Footprint In: [ArcGIS.com Map](#)

Service Description:

Map Name: Layers

[Legend](#)

[All Layers and Tables](#)

Layers:

- [Temperature](#) (0)
 - [3-7 Day Temperature Outlook](#) (1)
 - [8-14 Day Temperature Outlook](#) (2)
- [Precipitation](#) (3)
 - [3-7 Day Precipitation Outlook](#) (4)
 - [8-14 Day Precipitation Outlook](#) (5)
- [Wildfire Drought](#) (6)
 - [3-7 Day Wildfire/Drought](#) (7)
 - [8-14 Day Wildfire/Drought](#) (8)

Description: Temperature, precipitation, flooding, high winds, high waves, and wildfire/drought hazards for the U.S. through 14 days.

Copyright Text:

Spatial Reference: 4326 (4326)

Single Fused Map Cache: false

Initial Extent:

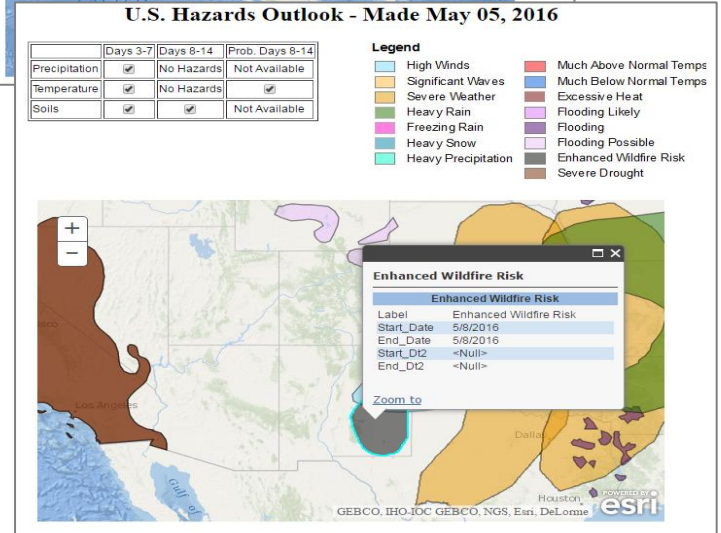
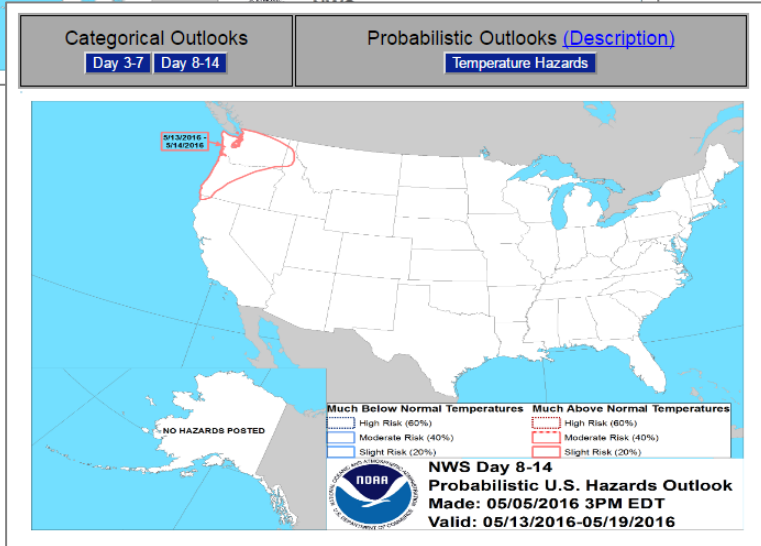
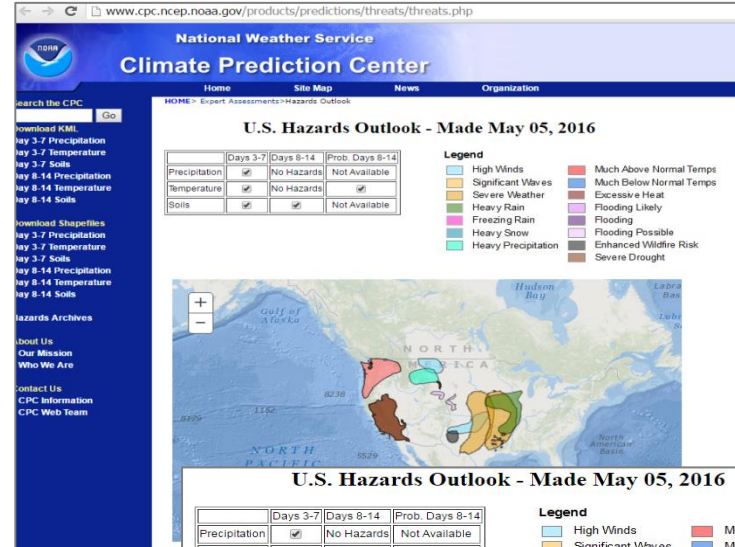
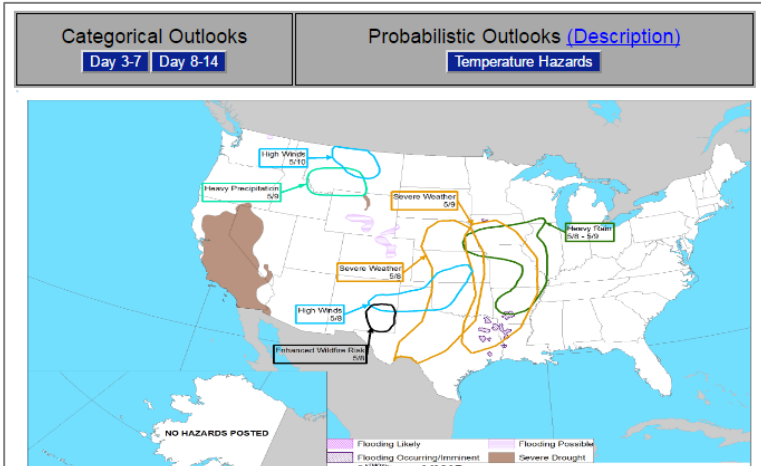
XMin: -242.78916047553895
YMin: -125.68803905591491
XMax: -1.1969145303176134
YMax: 215.01649658740504
Spatial Reference: 4326 (4326)

Full Extent:

idpgis.ncep.noaa.gov
Provides the ability to gather the information you need and add the data to your own map.

Available IDP Dissemination Services

IDP GIS – Climate Related





Open Data Activities



Open Data Initiative

Key Takeaways



- Survey was released in June 2014 to obtain feedback on:
 - additional weather prediction model output needs
 - the required format of the data, and
 - how long to make the data available for evaluation purposes
- NWS received 7 responses to the survey
- A consistent message was received for NWS to provide higher resolution model data both temporally and spatially in GRIB2 or netCDF format for all models
- A total of 18 specific requests were received



Open Data Initiative

Completed Responses to Requests as of 7/18/2016



| Request | Implementation/Dissemination |
|---|---|
| Simulated Satellite output from the GFS | FTPFRD, NOAAPORT |
| Request assimilation of automated commercial aircraft reports in GFS, NAM, SREF | Data assimilated in models |
| Access to post-processed model grids produced by NCEP Centers – such as OPC, NHC, SPC | NDFD grids are publicly available: http://www.nws.noaa.gov/ndfd/index.htm List of Center-specific products: http://graphical.weather.gov/docs/NDFDelem_complete.xls |
| Access to model catalog on NCEP produced model data | Available at: http://www.nco.ncep.noaa.gov/pmb/products/ |
| Evaluate model output from one month to two years prior to implementation | <ul style="list-style-type: none">• The NCEP process for model evaluations includes a 30-day customer evaluation• NCO will review options for access during model development |
| Access to the “Extreme Weather Index” tools currently in experimental mode | Available at: http://ssd.wrh.noaa.gov/satable/ An operational implementation date has not been determined |



Open Data Initiative

Completed Responses to Requests as of 7/18/2016



| Request | Implementation/Dissemination |
|---|---|
| Provide consistent temporal resolution for GFS after F192 | Extend consistency to 3 hourly from F000 to F240, 12-hrly F240 to F384. Completed 1/14/2015 Dissemination methods: FTPPRD, NOMADS, NOAAPORT, MAG |
| Add BUFR sounding data for The Netherland Schiphol Airport and the Japan Narita Airport | Completed 1/14/2015 Dissemination method: FTPPRD |
| Remove GEFS delay in products between F192 and F204 Increase GEFS spatial resolution | Completed Q1FY16 0.50° resolution output for entire model Spatial resolution consistency will reduce delay Dissemination methods: FTPPRD, NOMADS, NOAAPORT, MAG |
| Hourly output from the GFS through 8 days 5 days | Completed Q3FY16 FTPPRD, NOMADS MAG in August 2016 |
| Customer would like separate meeting with NCO to discuss data sampling and formats | Complete ... Continually meet with customers throughout the year at various conferences and partner meetings |
| Access to GFS in its native resolution | NCEP Central Operations provided a test dataset of the GFS master grib files on 5/4/2016. Link to data is: http://para.nomads.ncep.noaa.gov/pub/data/nccf/com/gfs/ |



Open Data Initiative

Long Term Action or On Hold as of 7/18/2016



| Request | Response | Issue with Request |
|---|--|---|
| Simulated Radar data from the GFS | No Plans to include in FY17 | Issue is due to the sophistication of the microphysics scheme |
| Provide earlier availability times for GFS and GEFS | Times of the model output are based on data input cutoff times | |
| Access to commercial airline data assimilated into models | The ACARS data is restricted | Terms of the contract with the data provider prohibit redistribution of this data |
| Access to ATCF model guidance for the global forecast basins | Atlantic, East Pacific, and Central Pacific ATCF guidance available via NHC ftp://ftp.nhc.noaa.gov/atcf | JTWC, part of the U.S. Navy, does not publicly make the guidance available for the Western North Pacific, Northern Indian, and Southern Hemisphere. |
| Provide ability to customize data requests under a unique login to prevent outside parties knowing which customer accesses certain data types | NWS must ensure equal access to data for all customers. | |



THANK YOU!

