

Clarus System



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Mixon/Hill, Inc.
Clarus ICC Meeting # 7
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Clarus Disclaimer

The *Clarus* System is an experimental product and is being used for evaluation and demonstration purposes only. This is provided as a public service.

No warranties on accuracy of data are intended or provided.

See link to contributor's data disclaimer in metadata file [contrib.csv](#).

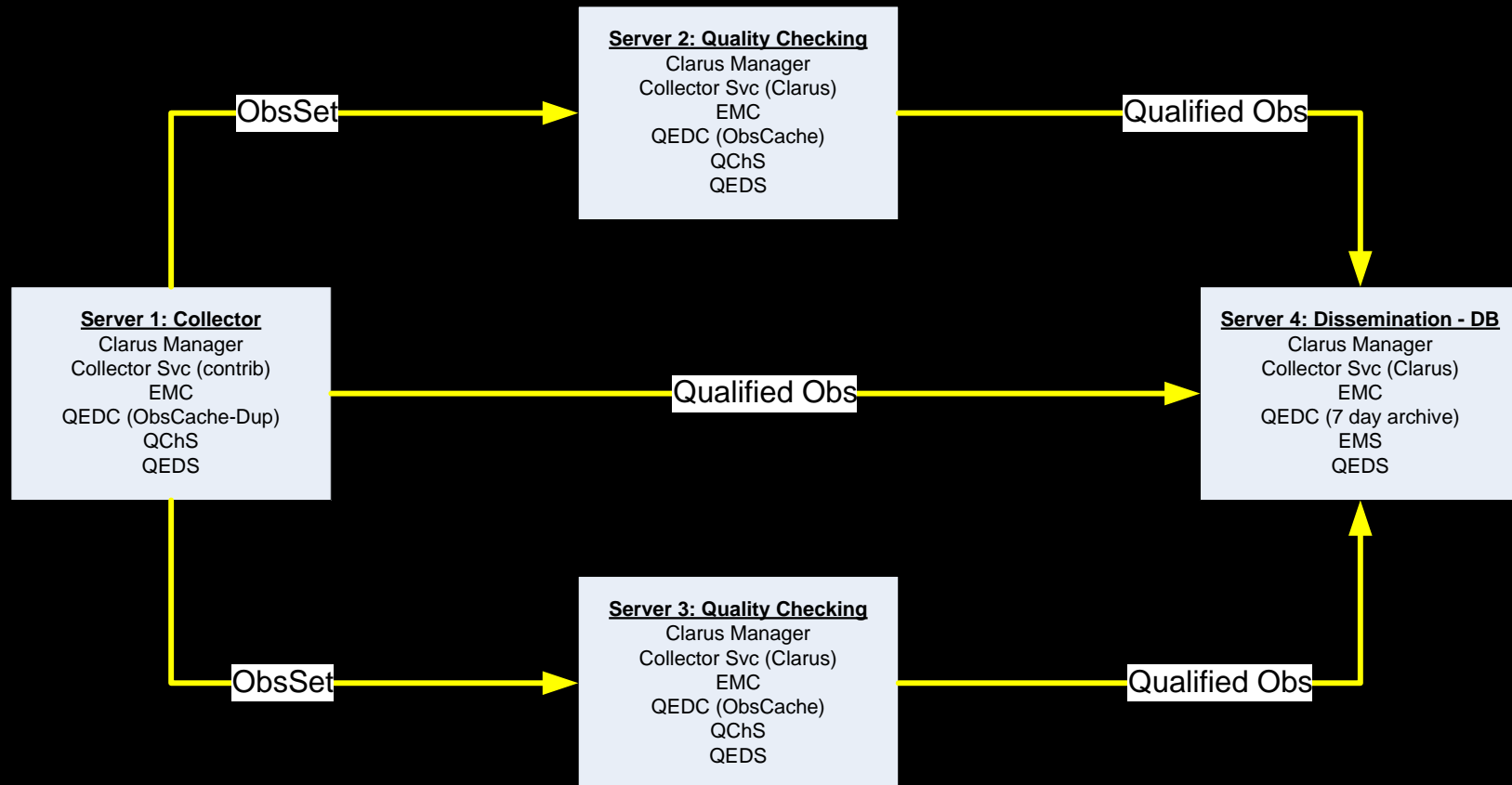
contrib.csv Metadata file

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2,2,"MN_State_DOT","Minnesota Department of Transportation",2,,2,1,
3,3,"UT_State_DOT","Utah Department of Transportation",3,,3,1,
5,4,"OK_State_Mesonet","Oklahoma Climatological Survey",6,3,4,1,
6,8,"AL_State_DOT","Alabama Department of Transportation",,,,0,
7,9,"AZ_State_DOT","Arizona Department of Transportation",,,,1,
8,10,"AR_State_HTD","Arkansas Highway and Transportation Department",,,,0,
9,11,"CA_State_DOT","California Department of Transportation",,,,1,
10,12,"CO_State_DOT","Colorado Department of Transportation",,,,1,
11,13,"CT_State_DOT","Connecticut Department of Transportation",,,,0,
12,14,"DE_State_DOT","Delaware Department of Transportation",,,,1,
13,15,"FL_State_DOT","Florida Department of Transportation",,,,1,
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16,18,"ID_State_TD","Idaho Transportation Department",,,,1,
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18,20,"IN_State_DOT","Indiana Department of Transportation",11,12,10,1,
19,21,"IA_State_DOT","Iowa Department of Transportation",,,,1,
20,22,"KS_State_DOT","Kansas Department of Transportation",,,,1,"http://www.ksdot.org/disclaimer.asp"
21,23,"KY_State_TC","Kentucky Transportation Cabinet",,,,1,
22,24,"LA_State_DTD","Louisiana Department of Transportation & Development",,,,0,
23,25,"ME_State_DOT","Maine Department of Transportation",,,,0,
```

Disclaimer Links

- If you would like a disclaimer link added to the contrib.csv metadata file
 - ◆ Email a request for the addition
 - ◆ Include the EXACT link in the email
 - ◆ Send the email to
brenda.boyce@mixonhill.com and a copy to
bryan.krueger@mixonhill.com

Clarus Servers (Load Balancing)



Clarus Statistics - Observations

- Observations – Quality Checked
 - ◆ 24-hour
 - 1,387,210
 - ◆ 1 week
 - 9,710,470
- Observations including ASOS/AWOS
 - ◆ 24-hour
 - 1,812,368
 - ◆ 1 week
 - 12,686,576

Clarus Statistics – Quality Checking Requirements

- Requirements

- ◆ A QChS shall be able to complete an automated quality check within **ten seconds** of when data is available for checking.
- ◆ All QChS shall be completed within **twenty minutes** of data being available for checking. (**5 minute** goal set by task force.)

Clarus Statistics – Quality Checking

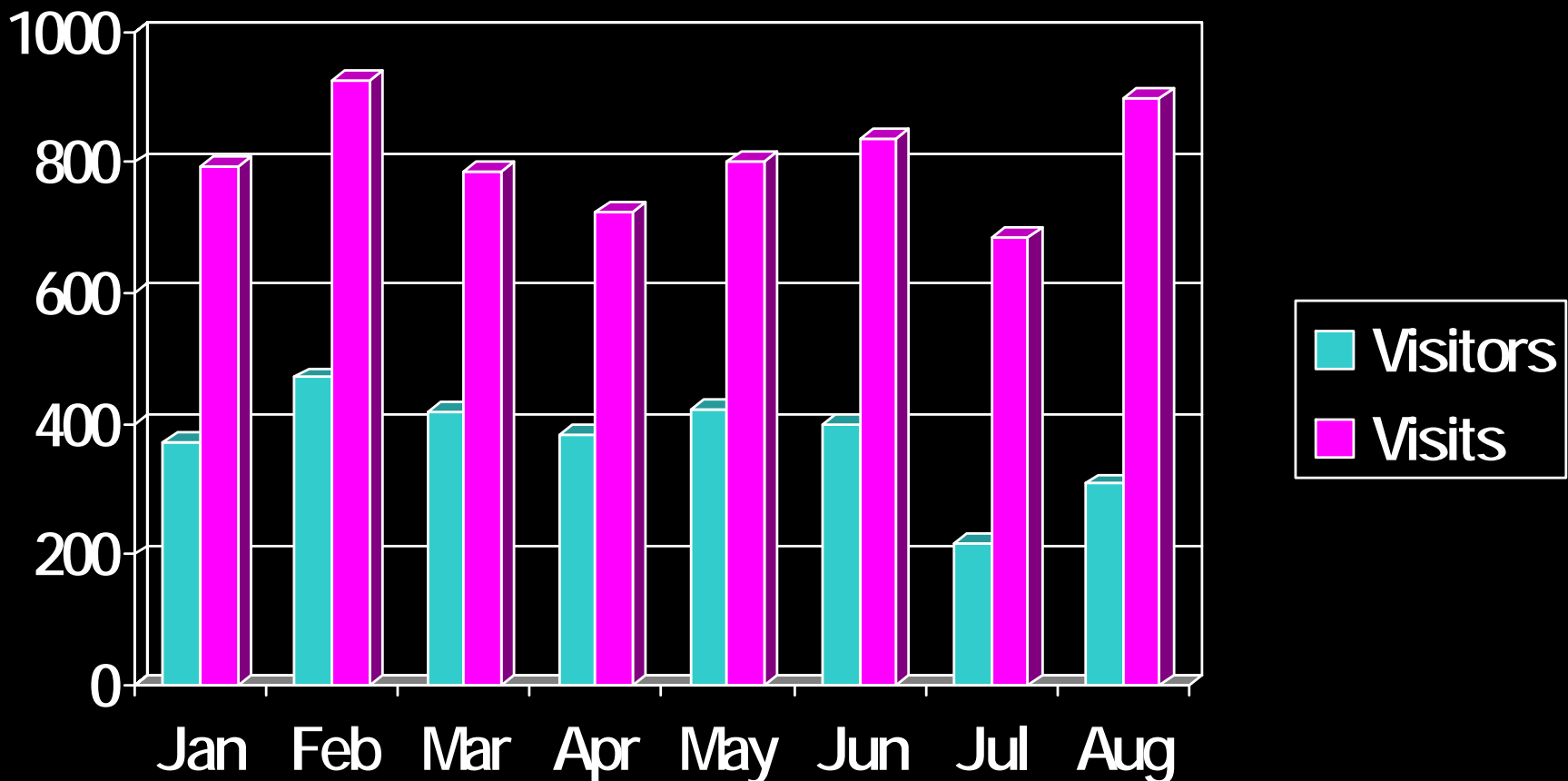
Quality Check Time In Seconds	Number of Observations
0.001	893,532
0.015	168,263
0.016	293,436
0.031	20,609
0.032	6,198
0.046	352
0.047	3,431
0.062	469
0.063	459
0.078	356
0.094	67
0.110	38
NWS	425,158
	1,812,368

- 100 Stations
- 15 Observations each
- Total – 1500 obs

Worst case scenario

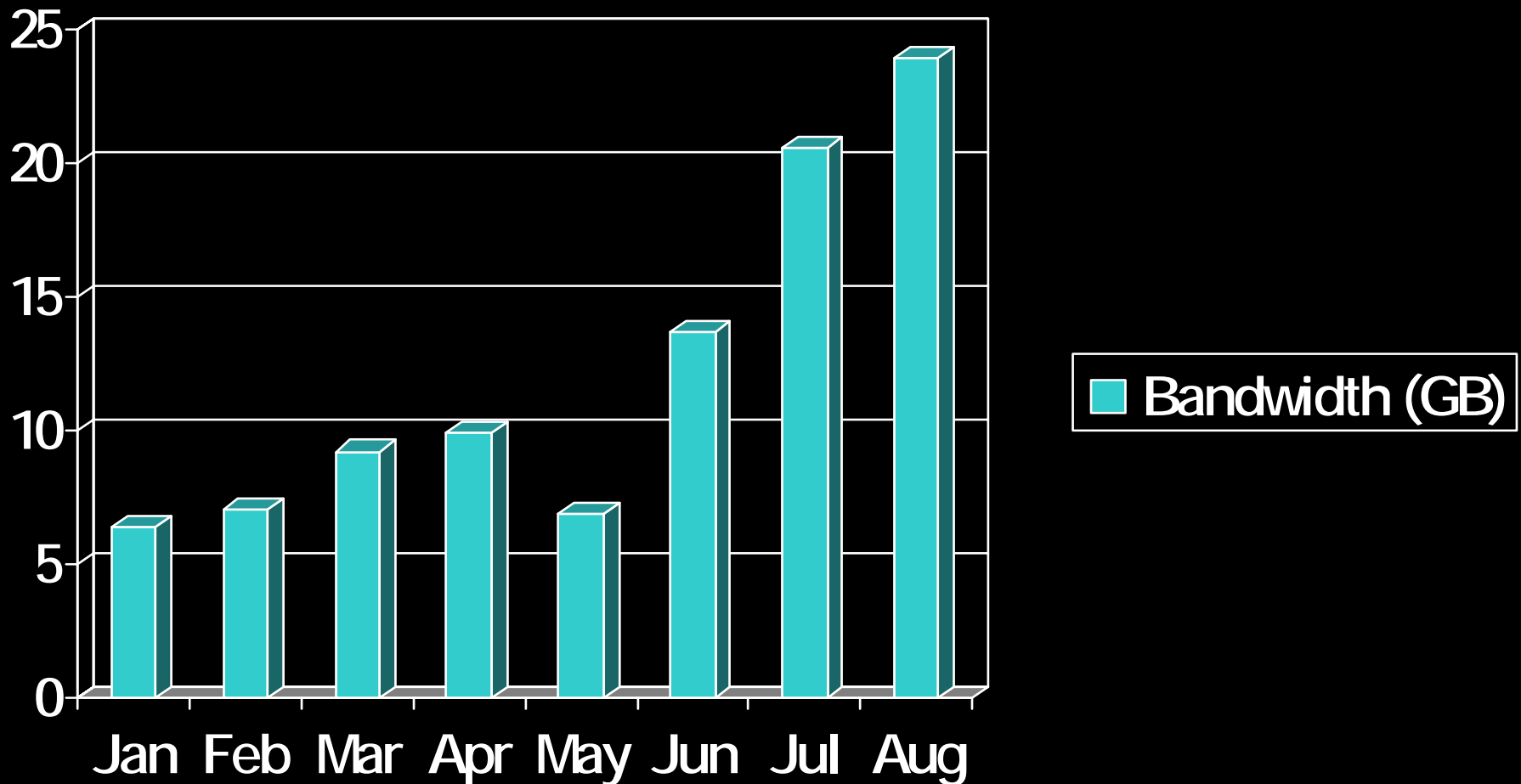
1500 obs x 0.110 s/obs =
165 seconds
(2.75 minutes)

Clarus System Statistics – Unique Visitors & Visits



Note: Does NOT include Mixon Hill Visits or Subscribers Downloading Files

Clarus System Statistics - Bandwidth



Clarus System Statistics – Hits by Country

Country	# of Hits
United States	520,983
Unknown	19,692
Canada	16,643
China	487
Great Britain	274
Russian Federation	233
Japan	186
Finland	170
Germany	125
France	82
Other (Brazil, S. Korea, etc.)	3559

Subscriptions

- New Feature
 - ◆ Fulfillment Increments
 - 5 minutes
 - 10 minutes
 - 15 minutes
 - 20 minutes
 - 25 minutes
 - 30 minutes
 - ◆ Previous Fulfillment Increment
 - 20 minutes

Clarus System

- Graphical User Interface Speed
 - ◆ Google Chrome
 - ◆ Firefox
 - ◆ Internet Explorer
- Communication Bandwidth
 - ◆ Three bonded T-1's
 - ◆ 4.5 Mbps Symmetrical Internet Connection
 - ◆ Speed out from *Clarus* and speed in to user

Increase Clarus' Database Speed

- Delete subscriptions that have not been utilized in 14 days (currently 90 days)
- Create 1 subscription for **all** observations (used by weather service providers)
- Limit ad-hoc reporting to 1 day (currently 7 days)
- Encourage creation of subscriptions vs. ad-hoc reports

Text to Numbers

- The following observation types are now available for conversion from text to a number
 - ◆ 206 Precip Intensity
 - ◆ 207 Precip Type
 - ◆ 586 Precip – Yes/No
 - ◆ 589 Precip Situation
 - ◆ 593 Cloud Situation
 - ◆ 5102 Visibility Situation
 - ◆ 51137 Surface Status
 - ◆ 511314 Black Ice Signal

Text to Numbers

- obsValueMap.csv
- 207 precipType
 - ◆ "obsTypeId","valueLabel","value"
 - ◆ 207,"0",2
 - ◆ 207,"frozen precipitation",6
 - ◆ 207,"light",1
 - ◆ 207,"no",3
 - ◆ 207,"none",3
 - ◆ 207,"other",1
 - ◆ 207,"rain",4
 - ◆ 207,"snow",5
 - ◆ 207,"unidentified",2
 - ◆ 207,"unknown",2
 - ◆ 207,"yes",2

Text to Numbers

315041 South Cortland Lat, Lon: 40.46516, -96.72128 Elevation: 438 m			Complete	Manual	Sensor Range	Climate Range	Step	Like Instrument	Persistence	Barnes Spatial	Dewpoint	Sea Level Pressure
Timestamp (UTC)	Observation Type	Value										
2009-08-12 22:01	essAirTemperature (C)	34.20	●	-	●	●	●		●	●		
2009-08-12 22:01	essDewpointTemp (C)	14.80	●	-	●	●	●		●	●		
2009-08-12 22:01	essRelativeHumidity (%)	31.00	●	-	●	●	●		●	●	●	
2009-08-10 00:15	essSurfaceFreezePoint (C)	0.00	●	-	●	●	●					
2009-08-10 00:15	essSurfaceIceOrWaterDepth (mm)	0.00	●	-	●	-	●					
2009-08-12 22:01	essSurfaceStatus	3.00	●	-	●							
2009-08-12 22:01	essSurfaceTemperature (C)	51.40	●	-	●	●	●	-	●	●		
2009-08-10 00:15	icePercent (%)	0.00	●	-	●		●		-	●		
2009-08-12 22:01	precipType	3.00	●	-	●							
2009-08-12 22:01	windSensorAvgDirection (deg)	200.00	●	-	●		●		●			
2009-08-12 22:01	windSensorAvgSpeed (m/s)	3.89	●	-	●	●	●		●	●		
2009-08-12 22:01	windSensorGustDirection (deg)	215.00	●	-	●		●		●			
2009-08-12 22:01	windSensorGustSpeed (m/s)	7.22	●	-	●	●	●		●	●		

Clarus Homepage - Links

Clarus System

2009-08-24 15:28 UTC

Reports and Subscriptions

Get Observations by:

[Contributor](#)

[Geospatial Coordinates](#)

[View Metadata](#)

[View Subscriptions](#)



[View User Guide](#)



[Link to Archive Data](#)

[Clarus Contact Information](#)

[Clarus Initiative](#)

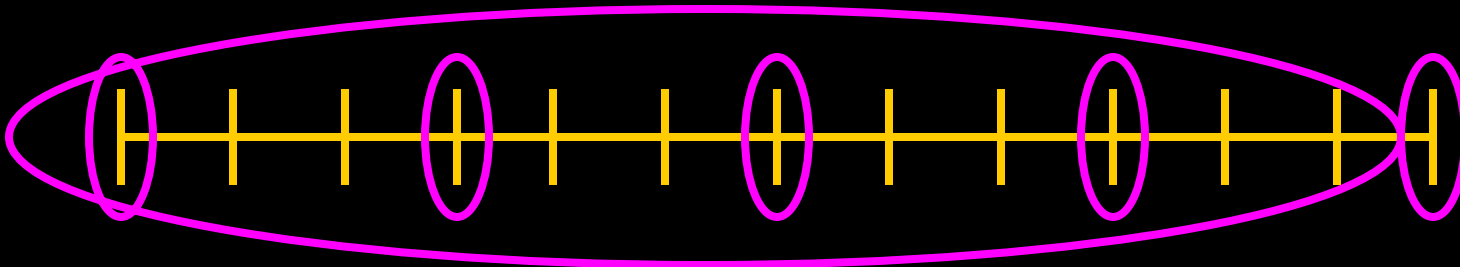
Clarus Success Stories

- First published success story: UND archive of *Clarus* data
- Email a request for the addition
- Include the text for the story
- Send the email to brenda.boyce@mixonhill.com and a copy to bryan.krueger@mixonhill.com

We would like to hear from you. If you have a success story using the *Clarus* System information and want to share your success with others, contact the *Clarus* System Administrator with the good news.

Persistence Test

- Old Method
 - ◆ Used observations in one hour intervals
- New Method
 - ◆ Uses observations over time



Quality Checking Background Fields

- Rawinsonde (Balloon data)
 - ◆ Pressure reading @ 700 mbar
- RSAS (Gridded smoothed observations)
- Stage II & IV Precipitation Observations

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