KCCI SchoolNet8 Workshop

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Iowa State University

http://www.schoolnet8.com
The Rundown

- CIPCO/IEM/KCCI/NWS partnership
- Who is using your data?
- IEM Tracker

http://www.schoolnet8.com
Our Partnership

IEM

Process Feedback

Custom Data Products

Data Services

Project Support

KCCI-TV

Operations Support

Improved Products

NWS

http://www.schoolnet8.com
Iowa Environmental Mesonet 411

• What does ‘mesonet’ mean?
  – ‘meso’ - Spatial scale, ‘net’ - network

• Why ‘environmental’?
  – We are interested in air quality, water quality and other non-weather datasets

• Abbreviated 'IEM'

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More on the IEM

- Project of the Department of Agronomy at Iowa State University
- We are data pigs.
- Look to meet the growing data needs of users in the State and elsewhere.
- KCCI SchoolNet is one of the many networks that send data to us.

http://www.schoolnet8.com
Data Flow

http://www.schoolnet8.com
Data Formatting

C 074 Min 02/17/03 ENE 00MPH 000K 460F 007F 084%
30.08" 00.00"D 00.07"M 00.00"R

D 074 Max 02/17/03 ENE 10MPH 050K 460F 021F 100%
30.20" 00.00"D 00.07"M 00.00"R

E 074 12:01 02/17/03 ENE 03MPH 046K 460F 020F 099%
30.09F 00.00"D 00.07"M 00.00"R

Your site produces roughly 6 obs per minute!

http://www.schoolnet8.com
KCCI uses it!

http://www.schoolnet8.com
SchoolNet8 Data Users

- Storm Prediction Center [SPC]
  - Norman, Oklahoma
  - In charge of providing *timely* forecasts of extreme weather.
  - Use schoolNet8 data to help identify *mesoscale* boundaries critical in severe weather forecasting

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SchoolNet8 Data Users

- River Forecast Center [RFC]
  - Chanhassen, MN
  - In charge of analyzing and forecasting river flood conditions. Hydrological data.
  - Use SchoolNet8 precipitation totals for their water analysis.
  - The SchoolNet8 network has doubled the hydrological observing sensors in Central Iowa.

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SchoolNet8 Data Users

- Forecast Systems Laboratory [FSL]
  - Boulder, Colorado
  - Data collected under the MADIS project.
  - Data is used in very detailed and heavily quality controlled surface analysis programs.
  - This data is then included in some operational weather forecasting models run in D.C.

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SchoolNet8 Data Users

• National Weather Service [NWS]
  – Des Moines, IA
  – Receiving data in three different formats
  – Use data in hydrological applications, surface analysis, severe weather awareness, winter weather awareness.
  – Are automatically alerted of 50+ MPH wind gusts and heavy rainfall.

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NWS Auto Alerts

• Previously, KCCI would have to manually relay observations to the weather service.
• Now, the IEM automatically generates warnings that appear on forecaster workstations.

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NWS AWIPS alerts

KCCI SNET OB: [06:54] 96 MPH GUST SGLI4 Glidden Ralston _ Glidden
LATEST OB: [06:54] 65/64 70MPH from NNW P: 01.25" RR: 00.00"

http://www.schoolnet8.com
18 June 2003:
Nevada SchoolNet

• A good example of how data from your school can make a difference in your community.

http://www.schoolnet8.com
At 1:34 PM, an alert is generated

KCCI SchoolNet8 Wind Gust Alert

Time: 01:34 pm -- 18 June 2003
Site: NEVADA COMMUN
Gust: 58 MPH

http://www.schoolnet8.com
At 1:37 PM, the NWS warns

137 PM CDT WED JUN 18 2003

THE NATIONAL WEATHER SERVICE IN DES MOINES HAS ISSUED A

* SEVERE THUNDERSTORM WARNING FOR...
  EASTERN STORY COUNTY IN CENTRAL IOWA

* UNTIL 230 PM CDT

7 MILES WEST OF COLLINS AROUND 150 PM AND NEAR MAXWELL AROUND 155 PM.

DAMAGING WINDS OF 60 TO 70 MILES AN HOUR ARE LIKELY IN THE WARNED AREA. THE KCCI SCHOOLNET SITE IN NEVADA REPORTED 58 MPH WINDS AT 134 PM.

http://www.schoolnet8.com
IEM Tracker

• System to manage metadata about sites
• Most of you have probably gotten the emails from “Iowa Environ Mesonet”
• Since the system came online on 25 June 2002, it has generated over 20,000 tickets
• Most of these tickets are generated from the automated data tracking system

http://www.schoolnet8.com
What are offline alerts?

- When ‘online’, your site is streaming observations to the Internet at roughly 6 obs per minute.
- A process on the IEM server monitors this feed and once the most recent ob is 30 minutes old, a trouble ticket is generated and site contacts are emailed.

http://www.schoolnet8.com
Understanding the Ticket.

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| *** IEM TRACKER REPORT *** |
-------------------------------

ID : SCOI4
Station Name : COLO ELEM _ COLO
Status Change : [OFFLINE] Site is NOT reporting to the IEM
Trouble Ticket# : 3704

Last Observation : 2003-02-17 23:53:00.00

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More about the tickets

• Probably 50% of the tickets are network related and out of your hands.
• 5% of the tickets are responded to with further information
• IEM tracker has improved network performance for each of the networks it monitors.

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SchoolNet8 Performance

• Fewest Tickets
  – 0 BCLUW
  – 1 Ogden
  – 2 Madrid

• Highest Online %
  – 99 BCLUW
  – 98 Fort Dodge
  – 97 Oskaloosa

• Most Tickets
  – 134 Colo
  – 126 Adel
  – 121 Lamoni

• Lowest Online %
  – 74 Clarion
  – 78 Mallard
  – 79 Blank Zoo

http://www.schoolnet8.com
Year by year

<table>
<thead>
<tr>
<th>Year</th>
<th>Sites</th>
<th>Online %</th>
</tr>
</thead>
<tbody>
<tr>
<td>2002</td>
<td>46</td>
<td>85%</td>
</tr>
<tr>
<td>2003</td>
<td>53</td>
<td>87%</td>
</tr>
<tr>
<td>2004</td>
<td>63</td>
<td>91%</td>
</tr>
<tr>
<td>2005(ytd)</td>
<td>66</td>
<td>97%</td>
</tr>
</tbody>
</table>

http://www.schoolnet8.com
Keep those clocks set!

• Data on the website is given a timestamp of the current IEM system clock and **NOT** the timestamp on the observation.
• The precipitation counters are adversely impacted by drifting clocks.
• It makes it a bit more difficult to calculate daily precipitation totals.

http://www.schoolnet8.com
Download Data Archive

http://www.schoolnet8.com
Data Archives

- 1 minute data archive exists since 12 Feb 2002, this is available on-line

- Since 10 Jul 2002, every observation is archived, but not readily available. I can fill these data requests if you send me an email.

http://www.schoolnet8.com
WWW Resources

http://www.schoolnet8.com
Circa 2001

Real-Time School Net Information

<table>
<thead>
<tr>
<th>Emerson Elementary/Indianola</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Time</td>
<td>01/09/02 21:37</td>
</tr>
<tr>
<td>Temperature</td>
<td>45 °F</td>
</tr>
<tr>
<td>Humidity</td>
<td>63%</td>
</tr>
<tr>
<td>Dew Point</td>
<td>33 °F</td>
</tr>
<tr>
<td>Wind</td>
<td>W-6</td>
</tr>
<tr>
<td>Pressure</td>
<td>29.93</td>
</tr>
<tr>
<td>Solar</td>
<td>0</td>
</tr>
<tr>
<td>Feels Like</td>
<td>42 °F</td>
</tr>
<tr>
<td>Rain for the day</td>
<td>0.00</td>
</tr>
<tr>
<td>Rain for the month</td>
<td>0.00</td>
</tr>
<tr>
<td>Rain Rate</td>
<td>0.00</td>
</tr>
<tr>
<td>High Rain Rate</td>
<td>0.00</td>
</tr>
<tr>
<td>High Temperature</td>
<td>57 °F</td>
</tr>
<tr>
<td>Low Temperature</td>
<td>44 °F</td>
</tr>
<tr>
<td>High Humidity</td>
<td>63%</td>
</tr>
<tr>
<td>Low Humidity</td>
<td>46%</td>
</tr>
<tr>
<td>High Pressure</td>
<td>29.93</td>
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<tr>
<td>Low Pressure</td>
<td>29.71</td>
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<tr>
<td>High Wind</td>
<td>NW-19</td>
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<tr>
<td>Low Wind</td>
<td>Calm</td>
</tr>
<tr>
<td>High Solar</td>
<td>28</td>
</tr>
</tbody>
</table>

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Circa 2003

http://www.schoolnet8.com
Today

http://www.schoolnet8.com
Which website is which?

http://www.schoolnet8.com
Questions?

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