

NMIM Training

Part 4

Miscellaneous Topics

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International Emission Inventory Conference
Portland, Oregon
June 2, 2008

Additional Credits

- Dave Brzezinski—roaming assistance
- Gary Dolce (TRPD)—slides dealing with SIP, Conformity, and Retrofit Guidance.

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Running NMIM from the Command line

- Nmimbatch.log
- Save M6 and NR input files

Running the Master from the Command Line

- Worker must still be started as a GUI
- Documentation in NMIM User Guide

```
c:\NMIM\NMIM20050311>
```

```
java gov.epa.otaq.nmim.core.NMIMCommandLine
```

- Try it - no arguments gives usage
- Put it in a batch file “runnmim.bat” and try it again

Argument	Parameters	Purpose or function
-m6in	None	Indicates whether to save mobilex.in files.
-m6svmt	None	Indicates whether to save SVMT files.
-m6tb1	None	Indicates whether to save aggregated mobilex.tb1 file from the worker.
-m6err	None	Indicates whether to save mobilex.err files.
-m6errtxt	None	Indicates whether to save M6error.txt files.
-m6process	None	Indicates whether to save ProcessOutput.txt files produced by MOBILE.
-nropt	None	Indicates whether to save NONROAD .opt files.
-nrmsg	None	Indicates whether to save NONROAD .msg files.
-nrout	None	Indicates whether to save NONROAD .out files.
-nrprocess	None	Indicates whether to save ProcessOutput.txt files produced by NONROAD.
-r	RunSpec file name and path	Specifies the location and name of a RunSpec file. If not using the "-rl" argument, then there should be at least one occurrence of "-r".
-o	Output folder name and path.	Specifies the location of the output files saved during batch mode. If not specified, then the current directory will be used. NOTE: This is a name of a directory, not the name of a file. Also, if using double quotes to specify the directory path, you cannot use a trailing backslash.
-e	1 - 5	Specifies the level of errors that should be logged into the log file. 1 = only RUN_ERROR types should be logged. 2 = ERROR and RUN_ERROR types should be logged. 3 = WARNING, ERROR, RUN_ERROR types should be logged. 4 = INFO, WARNING, ERROR, RUN_ERROR types should be logged. 5 = all error types should be logged.
-rl	RunSpec list file name and path	Specifies the location and name of a file that contains a list of RunSpec files to run. See "RunSpec List File Format" below.
-ol	Options list file name and path	Specifies the location and name of a file that contains a list of options. See "Options List File Format" below.

Exercise: Start Master and Worker from Command Line

- Why start from command line?
 - One layer simpler than icon
 - Better diagnostics: The window and its messages remain after the GUI closes.
- Master
 - Open command prompt window
 - Go to NMIM root directory (C:\NMIM\NMIM20050311)
 - C:\NMIM\NMIM20050311>setenv
 - C:\NMIM\NMIM20050311>ant rungui
- Worker
 - Open another command prompt window
 - Go to NMIM root directory (C:\NMIM\NMIM20050311)
 - C:\NMIM\NMIM20050311>setenv
 - C:\NMIM\NMIM20050311>ant runworker
- Close Master and Worker. What happened to the console windows?

Exercise 16: Run test1.nrs from Command Line

```
c:\NMIM\nmim20050311>java gov.epa.otaq.nmim.core.NMIMCommandLine  
-r RunSpecs/test1.nrs -m6in -m6svmt -nropt -o OptIn -e 5
```

- Only -r RunSpec required
- Put the rest of this into your batch file
- Run it
- NMIMBatch.log always created--look
- Look at the M6 in and SVMT files and NR opt files

RunSpecs

- XML code that can be text-edited
- Example
- Most codes obvious or easy to figure out
 - “pollutant index” codes an exception!

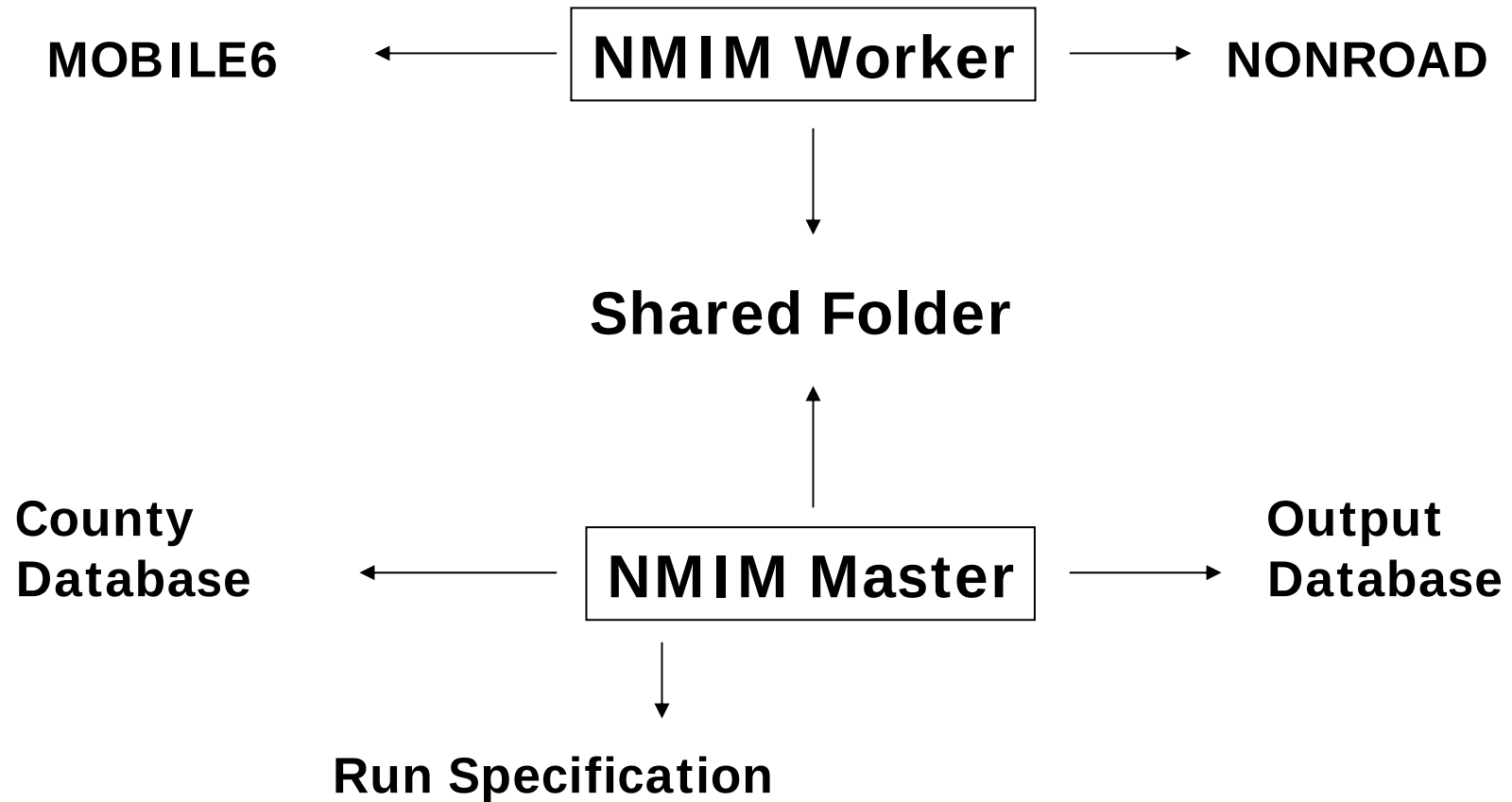
“pollutant index” in XML RunSpec file (NOT the same as RunSpecPollutantIndex in PollutantCode Table)

- 1 - Brake PM 10
- 2 - Exhaust PM 10
- 3 - Tire PM 10
- 5 - Brake PM 2.5
- 6 - Exhaust PM 2.5
- 7 - Tire PM 2.5
- 9 - SOA
- 10 - CO
- 11 - CO2
- 12 - HC
- 13 - NH3
- 14 - NOX
- 15 - SO2
- 16 - Acetaldehyde
- 17 - Acrolein
- 18 - Benzene
- 19 - Butadiene
- 20 - Formaldehyde
- 21 - MTBE
- 22 - Additional HAPS
- 23 - Dioxin/Furan

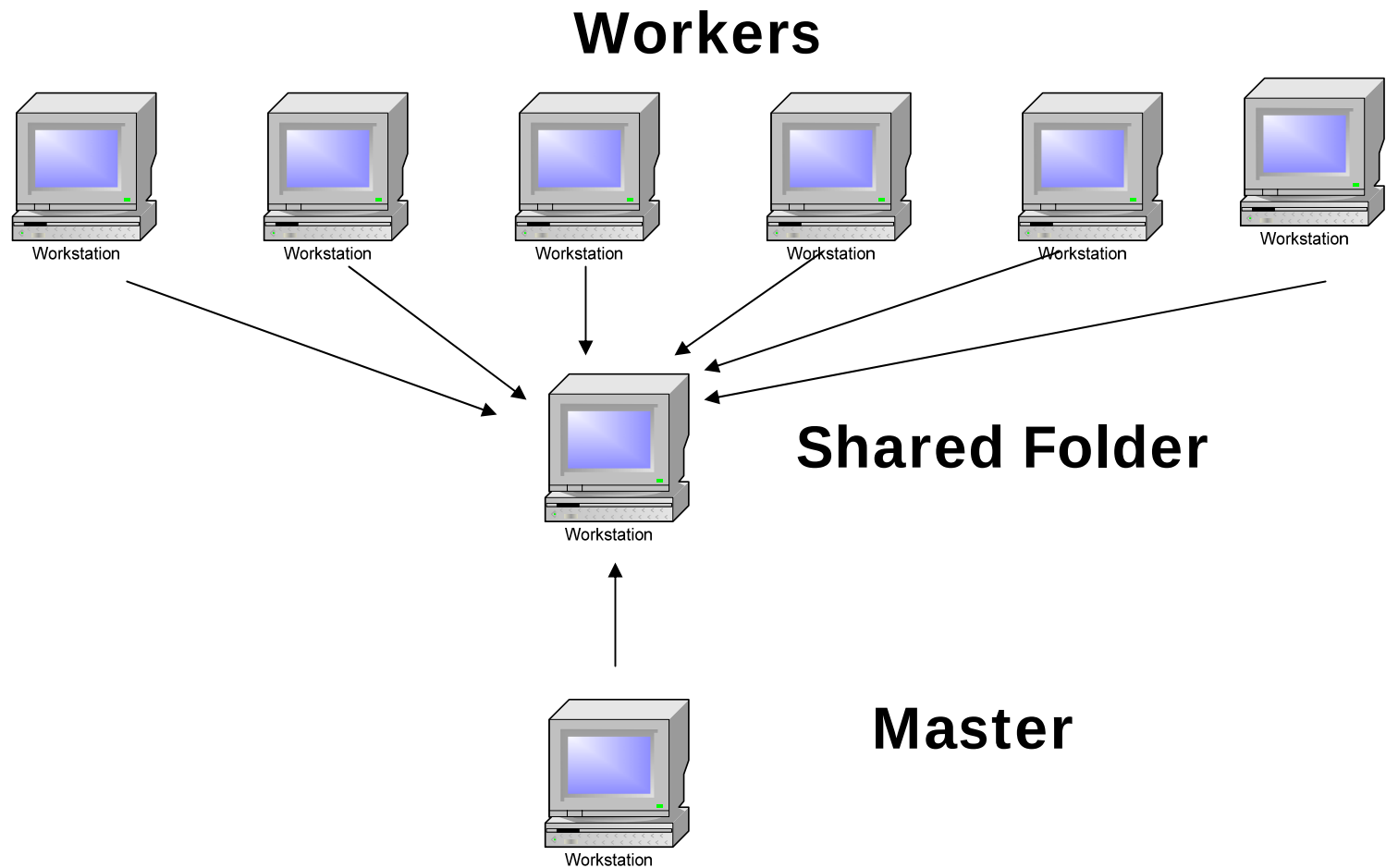
Exercise: XML RunSpec

- Look at test1.rs using a text editor
- Look at it using the NMIM GUI
- Extra
 - Change it using the text editor.
 - Look at the change in the NMIM GUI.
 - Change it using the GUI.
 - Look at the change using the text editor.

Standalone Processing



Distributed Processing



Distributed Processing

- Workers and Master must point to the same shared folder
- Run only one worker per machine (their temporary database tables will interfere with each other)
- If you have distributed workers, no point in running a worker on the Master machine.

Configuring NMIM

- Three files:
 - NMIMConfiguration.txt
 - WorkerConfiguration.txt
 - Setenv.bat
 - not needed if starting NMIM from icon.
 - needed for starting GUI from command line
 - needed for running from the command line (batch mode)

There are Three NMIM Configuration Files

- NMIMConfiguration.txt
 - Default NCD
 - Path to SharedWork folder
- WorkerConfiguration.txt
 - Paths to MOBILE and NONROAD
 - Path to SharedWork folder
- Setenv.bat
 - Paths to Java & its libraries

NMIMConfiguration.txt

```
countyServerName = localhost  
countyDatabaseName = County20040508  
outputServerName = localhost  
sharedDistributedFolderPath = C:\NMIM\sharedwork  
mysqlFolderPath = D:\mysql
```

- Must point to a valid NCD
- Shared folder must exist
- Use “localhost” for the server names

WorkerConfiguration.txt

```
sharedDistributedFolderPath =  
C:\NMIM\sharedwork  
mobileWorkingFolderPath = C:\NMIM\mobile6\run  
mobileApplicationPath =  
    C:\NMIM\mobile6\run\MOBILE6203NMIM.exe  
nonroadWorkingFolderPath = C:\NMIM\nr03a  
nonroadApplicationPath =  
C:\NMIM\nr03a\nonroad.exe
```

- MOBILE and NONROAD paths and executables must exist
- Shared folder must exist

Setenv.bat

```
@echo off
set ANT_HOME=C:\ant
set JAVA_HOME=C:\jdk1.3.1_02
set JAVAHELP_HOME=C:\jh1.1.3
set CLASSPATH=
set CLASSPATH=%CLASSPATH%;C:\junit3.7\junit.jar;C:\jfcunit\jfcunit.jar
set CLASSPATH=%CLASSPATH%;C:\NMIM\;C:\NMIM\libs\jlfgr-1_0.jar
set CLASSPATH=%CLASSPATH%;C:\NMIM\libs\mysql-connector-java-3.0.8-stable-bin.jar
set CLASSPATH=%CLASSPATH%;C:\NMIM\libs\jhall.jar
set CLASSPATH=%CLASSPATH%;C:\NMIM\libs\jaxp-api.jar
set CLASSPATH=%CLASSPATH%;C:\NMIM\libs\xercesImpl.jar
set CLASSPATH=%CLASSPATH%;C:\NMIM\libs\sax.jar
set CLASSPATH=%CLASSPATH%;C:\NMIM\libs\dom.jar
set CLASSPATH=%CLASSPATH%;C:\NMIM\libs\IAClasses.zip
set CLASSPATH=%CLASSPATH%;C:\NMIM\libs\InstallerCustom.jar
set CLASSPATH=%CLASSPATH%;.
set PATH=%PATH%;%JAVA_HOME%\bin;%ANT_HOME%\bin;%JAVAHELP_HOME%\javahelp\bin
```

Exercise

- Verify that mobile and nonroad paths in WorkerConfiguration.txt exist
- Change the WorkerConfiguration.txt so that one of the paths is wrong
- Restart the worker from icon
- Restart the worker from command line
- Kill a command line job with ctrl-c
- Fix the problem and restart worker

Post-run checks

- Search NMIMBatch.log for “error” and “exception.”
- Completeness tests
 - Match count of distinct county-months

Gotchas

- Using County Database for output
- Failing to start worker or having it point to a different shared folder
- Running on-road without VMT in BaseYearVMT

Microsoft Access Database Program Can Be Used as As a Front End for MySQL

- Get ODBC Driver - free download from MySQL.com
 - MyODBC-standard-3.51.07-win.exe
 - Install by clicking on it
- Set up ODBC connection for your MySQL DB
 - Start, settings, control panel, administrative tools,
 - data sources, System DSN tab
 - Add
 - Choose Driver (MySQL ODBC 3.51 Driver), Finish
 - Data Source Name and Database Name: County20040508
 - OK

Microsoft Access (cont.)

- Open Access
- File, new, blank database
- Create where you want it
- File, get external data, link tables
- Files of type: “ODBC databases”
- Machine databases tab
- Select County20040508, OK
- Link Tables, Select all, OK

Reasons for copying MySQL tables

- Using historical met data for all years
- CountyMap
- Multiple VMT estimates

Example batch file that copies MySQL tables

```
c:\mysql\bin\mysql -e "flush tables"
```

```
:: Get the right NR sulfur
```

```
copy C:\mysql\data\County20040412\CountyYearMonthRecm.frm C:\mysql\data\County20040412\CountyYearMonth.frm  
copy C:\mysql\data\County20040412\CountyYearMonthRecm.myd C:\mysql\data\County20040412\CountyYearMonth.myd  
copy C:\mysql\data\County20040412\CountyYearMonthRecm.myi C:\mysql\data\County20040412\CountyYearMonth.myi
```

```
:: Use the right representing counties
```

```
copy C:\mysql\data\County20040412\CountyMap0730.frm C:\mysql\data\County20040412\CountyMap.frm  
copy C:\mysql\data\County20040412\CountyMap0730.myd C:\mysql\data\County20040412\CountyMap.myd  
copy C:\mysql\data\County20040412\CountyMap0730.myi C:\mysql\data\County20040412\CountyMap.myi
```

```
:: Substitute 1999 temperatures and humidities for average temperatures for all years.
```

```
copy C:\mysql\data\County20040412\CountyMonthHour1999.frm C:\mysql\data\County20040412\CountyMonthHour.frm  
copy C:\mysql\data\County20040412\CountyMonthHour1999.myd C:\mysql\data\County20040412\CountyMonthHour.myd  
copy C:\mysql\data\County20040412\CountyMonthHour1999.myi C:\mysql\data\County20040412\CountyMonthHour.myi
```

```
java gov.epa.otaq.nmim.core.NMIMCommandLine -r RH2030c22d11.nrs -nropt -nrmsg -o NH2030c22d11/diagnostics -e 5
```

Same batch file using environment variables

```
mysql -e "flush tables"  
set rs=RH2030c22d11  
set diag=NH2030c22d11  
set db=county20040412  
set source=recm  
set map=0730
```

```
:: Get the right NR sulfur  
set tbl=countyyearmonth
```

```
copy C:\mysql\data\%db%\%tbl%\%source%.frm C:\mysql\data\%db%\%tbl%.frm  
copy C:\mysql\data\%db%\%tbl%\%source%.myd C:\mysql\data\%db%\%tbl%.myd  
copy C:\mysql\data\%db%\%tbl%\%source%.myi C:\mysql\data\%db%\%tbl%.myi
```

```
:: Use the right representing counties  
set tbl=countymap
```

```
copy C:\mysql\data\%db%\%tbl%\%map%.frm C:\mysql\data\%db%\%tbl%.frm  
copy C:\mysql\data\%db%\%tbl%\%map%.myd C:\mysql\data\%db%\%tbl%.myd  
copy C:\mysql\data\%db%\%tbl%\%map%.myi C:\mysql\data\%db%\%tbl%.myi
```

```
:: Substitute 1999 temperatures and humidities for average temperatures  
:: for all years.
```

```
set tbl=countymonthhour  
copy C:\mysql\data\%db%\%tbl%1999.frm C:\mysql\data\%db%\%tbl%.frm  
copy C:\mysql\data\%db%\%tbl%1999.myd C:\mysql\data\%db%\%tbl%.myd  
copy C:\mysql\data\%db%\%tbl%1999.myi C:\mysql\data\%db%\%tbl%.myi
```

