

DBA CLASS

General Information

- One week class offered twice in Denver – maximum of 25 students
- 2 rooms at NTC Copper or Keystone and the Breckenridge room
- will use both the oed1serv server and one of the hq servers, most likely hqsun5 but it depends on where we are with releases.
- The course is an NWIS DBA Course, all disciplines will be taught
- This fosters cross-training of our DBA's
- Who is the audience – NWIS DBA's some newbbies, some experienced
- Need to put together a package of basics
 - User overview of all systems, ADAPS, GWSI, QW, Water Use, Decodes, LRGS, NWISWeb, NWIS RT, NATWEB
 - How to communicate with NWIS
 - How to get help
 - GNATS system
 - Help groups
 - Documentation location
 - Location of on-line forms
 - Release notes
 - FAQ
 - NWIS related Policy Memos (ex: OFR97-11, FS-027-28, Memo 99.07, OGW93.03)
 - NWIS Home Pages, navigation, road map
 - User Groups
 - Unix basic commands
 - NWIS directory Structure
 - 3rd party Software
 - NWIS Graphics Splus/TKG2
- Need to take this opportunity to improve our DBA documentation

GENERAL INFORMATION (1.5 days)

- What is a DBA? **(8:00 – 8:15: 15 minutes with NWIS database presentation)**
 - Management Duties for National Water Information System Databases
 - QA plans
- What is the NWIS Database
 - NWIS is the official database, any data that has a spot in NWIS must be stored in NWIS
- Review basic information **(8:15 – 9:30 - 1.25 hrs)**
 - Data archival (local and National archives)

BREAK (9:30 – 9:45)

- Basic Ingres stuff **(9:45 – 10:45: 1 hr)**
 - Trouble shooting
 - Schema_editor and schema.script
 - Checking /usr/opt/ingress/files/errlog.log before it's aged into oblivion

- Disk space usage in /usr/opt/ingress/jnl, data, ckp, dmp directories
- Additional data areas when are then needed
- Frequency of checkpoints for nwisdb and iidbdb (what is iidbdb)
- Dis_ckpdb
- Verifying checkpoints
- Alternative Methods for accessing NWIS databases (10:45 – 11:45: 1 hr)
 - ODBC access to the NWIS Databases
 - SQL – examples
 - Data Model reference

LUNCH (11:30 – 1:30) & Ingres, SQL Exercise

- Security
 - NWIS Security Topics (1:30 – 2:30: 1 hr)
 - Different roles, users, logging in as nwis, nwisweb, satin, root
 - Set_permissions, local permissions
 - Nwis.access
 - Ingres groups
 - Access levels, how it changes to look of the menu, ADAPS, GW, QW
 - Interaction between subsystems
 - Local, proprietary data

Exercise & BREAK: NWIS security exercise (2:30 – 3:00)

- General Security Topics (3:00 – 4:00)
 - Homeland security
 - Disaster Recovery
 - Cooperator access and MOUs
 - COO Plan
 - More

BREAK (Conga line): 4:00 – 4:15

- Reference Lists, domain tables (4:15 – 4:45)
 - Release cycle
 - How to request changes
 - How to access through NWIS programs
- Exercise – Reference List: 4:45 -?? (needs to be done by Day #2)

*******Day 2*******

- “So you never thought you’d be an SA” (8:00 – 9:15: 1hr)
 - Adding a new user
 - Installing NWIS updates,
 - rpms
 - Backups and Recovery
 - Disk crash recovery
 - What gets backed up (what and how often), /usr/opt/ingress /usr/opt/nwis
 - verifying system backups
 - System Setup
 - batch queues (ADAPS and WATMOVE)

- DIS Cursor routines
- Maintenance
 - Schema_editor
 - Log cleanups
 - Use of nwisdb
- Crons job
 - What are they, which ones do we need, how to trouble shoot, review logs, etc
 - Complete list here—details to be discussed in subsystem discussions
 - Splus License manager, troubleshooting
 - web_gwcheck
 - delete transaction logs

Exercise & BREAK: SA exercise (9:00 – 9:45: 45 min)

- Sitefile responsibilities (9:45 – 10:30: 45 min)
 - Updating
 - Web Flag Impacts, gw_check, updating for local or proprietary
 - Station change, station history
 - Time fields (default for QW) additional effort for ADAPS

Exercise: (webflag; station history (local system), etc) (10:30 – 10:45: 15 min)

- Alternate Databases and when and when not to use them (10:45 – 11:00: 15 min)
 - Proprietary
 - Use of a separate instance of an nwis database
- Watmove (11:00 – 11:30: 30 min)

LUNCH (11:30 –12:30: 1 hr)

- Technical Reviews, what they look for, what can help (12:30 – 12:45: 15 min)
- Annual Report Scripts change (12:45 – 1:00: 15 min)
- Archiving computer files (1:00 – 1:30: 30 min)
 - What is considered original data – electronic files
 - Watlists, labfiles
 - Timeseries, blah blah blah
 - GW input files (we need to research this)

Exercise & BREAK: Archiving exercise (1:30 – 2:00: 30 min)

GWSI (Day #2: 2:00 – 5:00 & Day #3: 8:00 – 11:30)

- GWSI Administrator Training
- Get_stts script (includes examples of sql)
- DB Cleanup (need to review the page)
 - Orphans
- GW Check
- GWSI System Menu
- Web Flags
- NWIS View
- Data Dictionary

QWDATA (Day #3: 12:30 – 5:00)

- Cron jobs for qwdata
- Data flow from NWQL, Ocala, and others
- Watlist Management
 - What to do with them
 - What's important
- Rejected files, how to fix them, who is responsible (badqw)
- Qwcardsin vs qwenter
 - Take this info to your qwspecialist and data chief
- Qwreloadout – loading data to NWISWeb
- QC Databases – see FAQ, what is /usr/opt/nwis/qw_qadb
- QW interactive entry
- DQI Management, including data aging
 - setting,
 - inventorying
 - workflow
 - what goes to the web
- District Processing Status Flag
- Water Quality Fields forms
- QW Reloads from NWQL
- Data archival

ADAPS (Day #4: 8:00 – 5:00)

- Creating SW sites, including downstream order numbers
- Real time system
 - Gage to the page for Real-time data (documentation PIA Reference)
 - LRGS Client/Server information
 - Decodes maintenance, backups, installing dcps (use decodes overview powerpoint presentation on the nwis training page www.nwis.er.usgs.gov/TRAINING/decov.ppt)
 - Satin/sentry operations, utilities and logs, junk directory,
 - Sentry parms (config file)
 - Satin.cfg; satin.log
 - LRGS Command on the NWIS server
 - NWISWeb monitoring
 - NWIS RT (may need separate section)
- Basic ADAPS DB duties
 - Maintenance Menu
 - Creating Data descriptors
 - Creating processors
 - Location
 - Preferred input
 - Data aging
 - UV archive and restore
 - Repair_uv_times

- SDD – Standard device definition and DACTRAN (Linda Beal)
- Setting thresholds (see Dave Briar’s cyber seminar notes)
- Data archival
 - What gets archived
 - Monitoring space in /usr/opt/nwis/data
- OSW scripts
- Customization of the ADAPS menus

NWISWeb (Day #5: 8:00 – 10:00)

- Use of nw_edit
- Trouble shooting,
- understanding the status pages
- Monitoring the cron jobs
- FAQ

Water Use (Day #5: 10:00 – 11:00)

- Overview of “WHY” water use, “WHY” now
- Water use use of the ODBC Connections
- Using windows task manager to trouble SWUDS and AWUDS
- Installation of Job Processor using dcomcnfg (DCOM) and trouble shooting installation problems (probably an SA task, maybe tell them the symptoms of what to look for.) (This is the riskiest program, its the one we need to try in .NET to see if it is easier for the SA to install). (30 boring minutes, this is dry)
- AWUDS database install location, security, and backups
- SWUDS – procedss update published or approved WU Use, requires dba or wu_dba rights

Wrap-Up (Day #5: 11:00 – 11:30)

Action Items

AI: Colleen, contact Ed Fischer about how AAR will be impacted by the Electronic Only versions of the Annual report.

AI: ???? – review and update SQL examples

AI: Joel – look at decodes class notes and get LRGS highlights

AI: Joel – compile list of ALL crons jobs for NWIS, SATIN, Ingres, root, NWISWeb

AI: Joel, Dorrie, Lynn – Review general NWIS GNATS PRs and historical email for DBA-oriented issues

AI: Colleen – Check into funding for development and teaching for non-NWIS personnel

AI: Joel – Reserve rooms at NTC for proposed dates

AI: Joel – Send agenda outline out for review

AI: Coordinators: Contact potential persons mentioned below (wait for funding info from CAB)

AI: Dorrie – will call Barbara about timelines and schedules.

Potential Instructors and content developers

* Probably no more than 5 instructors total

Sonya Vasquez – GWSI (development & possible teaching?) & sitefile responsibilities

Julia Huff – GWSI (review content?)

Joel Johnson – ADAPS & NWISWeb & archiving computer files

Scott Bartholoma (secondary) – ADAPS & some security & Alternate methods to access NWIS databases

Joe Nielsen – ADAPS (reviewing content) & NWISWeb

Tim Stamey – ADAPS (reviewing content)

Ernest Dryer – DECODES/LRGS (reviewing content)

Jerri Davis – QW

Susan Lane – QW (Tampa) – not sure if she does DBA work

Melanie Clark – QW (review content)

Pat Ladd – QW (review content) and check for instruction time

Todd Augenstein – WU (content)

Carmen Baxter – WU (content) and check for instruction time & add a new user (content) & cron jobs (content)

Nancy Barber – WU & GWSI & WATMOVE

Dave Briar – NWISWeb (primary)

Colleen Babcock – Ingres stuff (?) & some security & alternate databases

Greg Shank – Ingres stuff

Richard Holloway – Security & Backups and Disaster Recovery & Maintenance

Jon Scott – WATMOVE (develop contents)

Lynn Taylor – Reference lists

Ed Fisher – Annual report scripts (develop contents)

Linda Geiger – Technical reviews (develop contents) & coordinate general section contents

Pre-course materials – Dorrie (coordinator)

Barbara Hoopes – Overview of subsystems

NWIS Fact Sheet; NWISWeb Fact Sheet; Cyber seminars for NWISRT and NATWEB; ADAPS Documentation Overview section; QW Getting Started Section and NWIS 4.1 training; GWSI Documentation Chapter 1; New SWUDS documentation (??not sure what sections)

Lynn Taylor – How to communicate with NWIS

Sean McMahon – NWIS directory Structure

Joel Johnson – Unix commands

Carmen Baxter – 3rd party software

Overall Coordinators

ADAPS & WU & NWISWeb – Joel (Course coordinator)

QW – Dorrie

General Information – Linda

GW – Sonya

Notes on Exercises

Test cases can be used as exercises.

Possibly do some work on students' local machines

Possible dates for class

January 26 – 30

Alt: February 9 – 13

November 17 - 21

Alt: December 8 –12

Timeline - Deadlines

June 20th – identify participants

August 30th – Complete draft materials and presentations

September 12th – Complete review of draft materials

Sept 19th – Send materials to Barbara

October 3rd – Final materials completed by Barbara

October 17th – Final review by instructors

October 31st – Materials ready for printing

Outline Review

Jon Scott

Scott McEwen

Linda Beal

NWIS Staff

User groups