



Office of Water Quality Water-Quality Information Note 2008.14

Subject: National Water Information System (NWIS)—Updates to the QW-data Transfer System (QWDX) – Version 1.2, and Implications for Users and Laboratories

Summary

An updated version of the QW-data Transfer System (QWDX) is now available for use by personnel from internal USGS water-quality and sediment laboratories and Water Science Centers (WSCs). This update replaces the version that was announced in [WaQI Note 2007.012](#) and includes several enhancements and bug fixes. This new version of the software has been tested extensively.

What updates are included in Version 1.2 of QWDX?

Cron job to upload data

Laboratory users will find a new menu option with instructions on how to set up a process to automatically upload data to QWDX. The cron job is controlled by a Unix script that can be executed either 1) regularly (such as daily or weekly) via the Unix “cron” scheduler or 2) intermittently from the Unix prompt by the Lab user.

Validation checks

Additional validation checks were added to the data upload functions. These validation checks will flag selected errors in the *qwsample* and *qwresult* files.

Revised reports

Laboratory reload data are now flagged with an asterisk (*) in selected reports.

Documentation Updates

Online documentation for the QWDX (<https://qwdx.cr.usgs.gov/>) has been updated to include these changes. [NOTE- You may have to copy and paste this QWDX link into your browser.]

Cron job to download data

The existing feature that allows automated downloads of data from QWDX to your NWIS server will become more critical as the National Water Quality Laboratory (NWQL) begins to distribute all their routine data through QWDX. WSCs that currently use an automated process to load water-quality data from NWQL into QWDATA and have not yet installed the automated download QWDX software will probably want to do so, and configure it with the desired options.

WSCs that have already installed the auto-download software need not install it again. However, the procedures of using the automated download software are changing.

All WSCs that use the automated download process must set up a new QWDX Unix user and must modify the auto-download options (cron) to use this new Unix user. Specific instructions are included in this announcement to create this new Unix user. Sometime after the NWQL begins to use QWDX to transmit all data, Local QWDX database administrators (LocalDBAs) will no longer be allowed to make auto-download connections to the QWDX server; only this new QWDX Unix user will be able to do so. Interactive downloads will still be available for LocalDBA users.

When will the NWQL use QWDX for all data transmittals?

A future Rapi-Note will announce the implementation dates and additional instructions before QWDX is used by NWQL for all data transmittals. This future Rapi-Note will include training announcements for laboratory users and WSC users.

Where is the QWDX and how are accounts established?

The QWDX continues to be hosted and maintained by the NWQL and is located at: <https://qwdx.cr.usgs.gov/>. [NOTE- You may have to copy and paste this QWDX link into your browser.]

To use the QWDX, a userid will need to be registered with the system. LocalDBAs and laboratory users must register by sending an e-mail request to the QWDX Administrator (**GS-W QWDX Admin**). After the LocalDBA has been registered, field users can be registered by their LocalDBA.

If additional help is required or questions arise, please send email to **GS-W Help QWDX**. A group of individuals is available to answer questions and provide help with the QWDX.

How do I create the new Unix user for automated downloads?

(Note: These steps will require the help of your local system administrator or NWIS DBA):

Create a QWDX user account on your NWIS server

Follow the instructions below to create the qwdx**ST** user account and the required Ingres and NWIS access. Replace all instances of "**ST**" to the appropriate lowercase 2-character state code assigned to your WSC in Table 1. For example, the user name for the California WSC would be "**qwdxca**"; for Montana it would be "**qwdxmt**".

As **root**,

Add the following line to the /etc/passwd file.

```
qwdxST::NUM:31300:QWDX User for ST:/home/qwdxST:/bin/ksh
```

Change all instances of ST to the two letter state abbreviation (e.g. qwdxca).

Change “:/home/qwdxST” to the appropriate path of the home directory for qwdxST

Change NUM to the user number assigned for your state (Table 1)

Create the home directory on your NWIS server for your qwdx**ST** user.

Make sure the qwdx**ST** has proper ownership and permissions to its home directory.

Example scenario:

```
mkdir /home/qwdxST
```

```
chown qwdxST:nwuser /home/qwdxST
```

```
chmod 755 /home/qwdxST
```

Run the command "pwconv"

Set the password for qwdxST

```
passwd -r files qwdxST
```

Add the following line to /etc/user_attr to prevent the account from locking

```
qwdxST:::lock_after_retries=no
```

Login as qwdxST and create public key account

```
cd
```

```
ssh-keygen -d (hit ENTER for the 3 prompts to accept the defaults)
```

This will create the file ~qwdxST/.ssh/id_dsa.pub that will need to be emailed to GS-W QWDX Admin in a later step.

As **ingres**,

Add user **qwdxST** to ingres.

```
accessdb
users
F10 (Create)
Add user name qwdxST
F7 (Save)
F3 (Quit)
F3 (Quit)
```

Add user **qwdxST** to Ingres group **nwis_select**,

```
tsql iidbdb "alter group nwis_select add users
(qwdxST) "
```

As **nwis**,

Add user **qwdxST** to **nwuser** and **nwqw** NWIS groups

```
nwuseradd -G nwuser nwqw qwdxST
```

Test the new userid and its database access.

Login as **qwdxST** using the password

Test database access

```
tsql nwisST -Gnwis_select "select * from
dbn_def"
```

<should be rows returned>

Test access for entering data into QWDATA. Make sure the message "(Not Avail)" does not appear on the main QWDATA menu options.

Send "ssh" public key via email to **GS-W QWDX Admin**, for a limited Unix account on the QWDX server. To accomplish this use the command below:

```
/usr/bin/uuencode qwdxST.txt < /home/qwdxST/.ssh/id_dsa.pub | /usr/bin/mailx
-s "qwdxST key" GS-W_QWDX_Admin@usgs.gov
```

Make sure any other cron entries for QWDX downloads (by a local DBA) do not conflict with crons used by **qwdx[ST]**.

The "**qwdx[ST]**" user will be able to access QWDX in batch mode using a cron process to download data from QWDX. This user will not be able to download data via the QWDX web browser.

Table 1.—Unique user number for each Water Science Center QWDX installation

User number – QWDX State Name
31400 - qwdxal (Alabama QWDX)
31401 - qwdxak (Alaska QWDX)
31402 - qwdxaz (Arizona QWDX)
31403 - qwdxar (Arkansas QWDX)
31404 - qwdxca (California QWDX)
31405 - qwdxco (Colorado QWDX)
31406 - qwdxfl (Florida QWDX)
31407 - qwdxga (Georgia QWDX)
31408 - qwdxhi (Hawaii QWDX)
31409 - qwdxid (Idaho QWDX)
31410 - qwdxil (Illinois QWDX)
31411 - qwdxin (Indiana QWDX)
31412 - qwdxia (Iowa QWDX)
31413 - qwdxks (Kansas QWDX)
31414 - qwdxky (Kentucky QWDX)
31415 - qwdxla (Louisiana QWDX)
31416 - qwdxmd (Maryland QWDX)
31417 - qwdxma (Massachusetts QWDX)
31418 - qwdxmi (Michigan QWDX)
31419 - qwdxmn (Minnesota QWDX)

31420 - qwdxms (Mississippi QWDX)
31421 - qwdxmo (Missouri QWDX)
31422 - qwdxmt (Montana QWDX)
31423 - qwdxne (Nebraska QWDX)
31424 - qwdxnv (Nevada QWDX)
31425 - qwdxnj (New Jersey QWDX)
31426 - qwdxnm (New Mexico QWDX)
31427 - qwdxny (New York QWDX)
31428 - qwdxnc (North Carolina QWDX)
31429 - qwdxnd (North Dakota QWDX)
31430 - qwdxoh (Ohio QWDX)
31431 - qwdxok (Oklahoma QWDX)
31432 - qwdxor (Oregon QWDX)
31433 - qwdxpa (Pennsylvania QWDX)
31434 - qwdxpr (Puerto Rico QWDX)
31435 - qwdxsc (South Carolina QWDX)
31436 - qwdxsd (South Dakota QWDX)
31437 - qwdxtn (Tennessee QWDX)
31438 - qwdxtx (Texas QWDX)
31439 - qwdxut (Utah QWDX)
31440 - qwdxva (Virginia QWDX)
31441 - qwdxwa (Washington QWDX)
31442 - qwdxwv (West Virginia QWDX)

31443 - qwdxwi (Wisconsin QWDX)
31444 - qwdxwy (Wyoming QWDX)
31445 - qwdxme (Maine-remote QWDX)
31446 - qwdxvt (New Hampshire/Vermont-remote QWDX)
31447 - qwdxri (Connecticut/Rhode Island-remote QWDX)

For assistance and questions about these instructions, please contact **GS-W QWDX Admin**.

If this Note was forwarded to you and you'd like to have your name placed on the WaQI Notes distribution, please send email to nlsnow@usgs.gov.

*WaQI Notes are archived on the Office of Water Quality web site,
<http://water.usgs.gov/usgs/owq/WaQI/index.html>*