

## How Your X-ref was Created

Due to the flexibility designed into the X-ref build, you may find the process a bit complex at first. There are a number of resources you can utilize. Your primary resource is Hawkeye Technical Services. We can explain the in's and out's of the build and refresh processes so you'll understand in short order.

As you begin the task of managing PATHFINDER cross reference, there are some questions that you may need to ask. Here are some resources to help with answers. To get any of the Tips & Techniques Articles mentioned below or discuss any PATHFINDER topic, just contact Hawkeye Technical Services by email at [Info@hawkeye.com](mailto:Info@hawkeye.com).

**\*\* What PATHFINDER release level is on your system?**

The current release level is displayed in the upper right corner of each PATHFINDER menu. To start the PATHFINDER main menu enter the command HAWKEYE/HAWKEYE. Hawkeye Technical Services can tell you what the latest release level is.

**\*\* What libraries have been cross referenced in the past?**

X-ref history information will be very helpful. The technical article, "PATHFINDER X-ref History Tells All" will describe how to find and use X-ref history. This facility can tell you when the X-ref was built, what was included, and when it was "refreshed".

**\*\* What libraries need to be cross referenced? And within those libraries are there "multiple environments", identified by multiple sets of objects by the same names?**

The technical article, "The Importance of Setup Values" includes a discussion of what libraries to include in the X-ref, how to appropriately arrange the list of objects and how to handle "multiple environments".

**\*\* How often should the X-ref be refreshed?**

It is very important to refresh the X-ref regularly so that the information is current and reliable. The refresh doesn't have to document every object so it is much faster than the original build. The refresh updates the X-ref for only the objects that have been changed, added or deleted since the last refresh. Many sites are able to refresh nightly, while others refresh only on the weekends. In either case, the best approach is to schedule the refresh job to execute regularly without user intervention. Methods for accomplishing this are discussed in the technical article "Up-to-date Effortlessly".

**\*\* Where is the source for the application programs? Has the source for program objects been moved since the programs were created?**

If the source has been moved since creation, PATHFINDER will need a Source List to find the source for your program objects. "The Importance of Setup Values" article, mentioned above, describes the Source list. Also, DDM (Distributed Data Management) can be used to provide access to source located on another system.

\*\* Does your site utilize a job scheduler such as Help Systems' Robot or iSeries (AS/400, Power Systems, System i) job schedule entries?

If so, you may benefit from special API's available to document these systems. Help Systems provides the command RBTBLDHAWK, an interface to document the Robot job scheduler. And, the API program H\$APISCDE in HAWKEYE/QCLSRC1 allows you to add to the Object X-ref any objects referenced by job schedule entries.

\*\* What is the security level on your iSeries?

Check the system values (DSPSYSVAL) called QSECURITY and QAUDLVL. If QSECURITY=40 or QAUDLVL=\*PGMFAIL then PATHFINDER cannot execute many of its Machine Instruction (MI) programs. These MI programs can get information from your system much faster than conventional IBM outfiles and API's can. The implication is that no information will be lost, but it will take many PATHFINDER functions longer to execute. This includes the X-ref build job as well as the real-time options in the package. To eliminate the impact to PATHFINDER, reduce security to QSECURITY=30 and QAUDLVL to anything but \*PGMFAIL if possible.

\*\* How long will the X-ref build take to execute?

The rule to apply is: 1 to 2 hours per 1000 RPG or COBOL programs. PATHFINDER also documents CLP, DFU, QRY, \*MENU and other objects but this average tends to hold true. And, the Object X-ref and Field X-ref are built and refreshed separately, therefore, each will be subject to this average. Keep in mind that the refresh will be much faster than the original build, because it will only be updating the X-ref for the objects that have changed since the last refresh.

After the X-ref builds have completed, be sure to read through the reports that are produced. The help text for the build/refresh reports can be turned on to aid in interpreting them the first time. To turn on help text for PATHFINDER reports, use the "F18=Defaults" function and set the "Print help text on reports" flag to "Y" (yes). The build/refresh reports will contain information about problems encountered that may cause the X-ref to be less accurate. You may find that the setup values need to be adjusted and the build executed again. When you are satisfied that everything was documented successfully, refer to the discussion of the X-ref refresh in the "Up-to-date Effortlessly" document. The refresh will allow you to keep the X-ref up-to-date without having to rerun the X-ref build.

### **Summary of additional reading**

Tips & Techniques articles:

"Up-to-date Effortlessly"

"The Importance of Setup Values"

"PATHFINDER X-ref History Tells All"

Reference Manual

Set Up section

Appendix C – PATHFINDER Source API