

(U//FOUO) CADENCE

Read Me

(U) Overview

(C//SI) CADENCE is a strong selection tasking tool dating back to the days of telegraphy. In the world of telegraphy, only the textual content of the communications was intercepted. CADENCE's role was to assign categories to the text and then forward the data for a given category. CADENCE, in combination with software selection tools, is still used today by many Digital Network Intelligence (DNI) systems.

(U//FOUO) XKEYSCORE can be configured to ingest CADENCE dictionaries, and provide high-speed content filtering, selection, and forwarding capabilities.

(C//SI) The CADENCE system fully automates the Front-End Dictionary Management process to filter and select intelligence. Dictionary managers and target analysts can electronically submit, review, and forward dictionary updates to scan traffic for keywords, to execute category rules and to define Boolean and positional equations of keywords. Receipts for these requests are automatically generated, statistics are compiled and reported, and approved updates are maintained in a database containing historical information for the DDO review of "USSID-18" compliance.

(U//FOUO) Configuring XKEYSCORE for CADENCE can be accomplished in three steps. First, you must complete a pre-configuration set-up process. Next you will configure *xks.config* to enable CADENCE tasking and appropriate MAILORDER routing. Last, you will execute additional set-up processes:

(U) Pre-Configuration Set-Up

(U//FOUO) Follow these steps before configuring XKEYSCORE for CADENCE:

1. (U//FOUO) To submit a new Data Management Requirement (DMR), in your browser, go to:

 [s3m1/s3m14/s3m141/index.php?content=dataManagement](#)

and follow steps 1-3 for submitting a new DMR.

2. (U//FOUO) Create a MAILORDER ticket to set-up the pick-up directory for your Master XKEYSCORE server:
 - a. Type `go mailorder` in the URL field of a browser on a high-side computer.
 - b. Click on the yellow `PATHMASTER Remedy Ticket` button near the top right of the screen. The Remedy Ticket Submission screen will appear. In the bottom half of the screen are two regions each containing a yellow `Submit Remedy Ticket` button.
 - c. In the bottom half of the Remedy Ticket Submission screen is two yellow *Submit Remedy Ticket* buttons. Click the top button of the two. (This ticket pertains to New Data-Flow). The ITSC login screen will appear.
 - d. Enter the SID of your alternate POC and then click `Continue`. A screen containing contact information for you and your POC will appear.
 - e. Add/Edit the contact information as appropriate and then click `Continue` to go to the *Data transport service* screen.
 - f. Click `Dataflow request` and then click `Continue`. The *Request for New Data Flow on an Existing Transport System* screen will appear.
 - g. Enter as much information as you can. In the *Data Flow Change Description* field, specifically indicate that the drop-off directory should be:
`/export/data/xkeyscore/inputs/mailorder`
 - h. Click `Submit`. You will receive a confirmation e-mail indicating the ticket has been received, and more information may be requested before the ticket can be completed. The overall process might take anywhere from a few days to a week to complete.
3. Repeat step 2 to create a MAILORDER ticket to set-up the pick-up directory for your Master XKEYSCORE server. In this case, in step g, specifically indicate that the pick-up directory should be: `/export/data/xkeyscore/outputs/mailorder`.
4. (U//FOUO) After you receive an approved response back for your DMR, send an e-mail message to [REDACTED] to start receiving CADENCE tasking.

(U//FOUO) Configuring *xks.config*

1. (U//FOUO) Log on as the user `oper`.
2. (U//FOUO) At the command line from within any directory, type `vi config` and then press `Enter`. The *xks.config* file will open. Set the following four CADENCE configurations:
 - a. `cadence = yes`: This enables CADENCE tasking. The default setting for this configuration is `no`. This entry is what creates the `cadence_tasking_proc` process, after `xks` setup processes is run.

Note: If you enable CADENCE, then you must set up MAILORDER inputs for CADENCE to go into `inputs/cadence`. (See step 2d below.)
 - b. `site_fdi = XXX`: This is the identifying trigraph assigned to a particular system that is embedded inside a response message so CADENCE can determine which system sent a response. The `cadence_tasking_proc` option uses this `fdi`. XXX is the default. (See *Additional Processes*, Step 4.)
 - c. `mailorder = yes`: This enables the `mailorder_proc` process. Its default is `no`.
 - d. `mailorder_input[0] = source:OO:TY,dir:cadence`
 This re-directs all incoming files that have a PDDG of OO and a source system digraph of TY from `$XSCORE_DATA_DIR /inputs/mailorder` to `$XSCORE_DATA_DIR/inputs/cadence`.

3. (U//FOUO) In the `#[dictionaries]` section of *xks.config*, below the line “`dictionary[] = PLACEHOLDER – DO NOT REMOVE – ADD ENTRIES BELOW`”, type:

```
dictionary[0] = type=cadence
```

(U//FOUO) This setting indicates that all tasking should be pulled locally from `$XSCORE_DATA_DIR/dictionaries/cadence/dicts` and `.../fists`. This will use the `first_links` file that was delivered by CADENCE for mapping the `dictionary: first_table` and can be found in `$XKSCORE_DATA_DIR/dictionaries/cadence`.

(U//FOUO) When the `xks update_dictionaries` process runs as a cronjob, then it knows automatically to pull the updates from these directories.

Note: (U//FOUO) CADENCE dictionaries must end with `.netlayer` and `first` tables must end with `.first`.

4. (U//FOUO) Type `:wq!` and then press `Enter` to exit *xks.config*.

Additional Processes

(U//FOUO) After editing CADENCE configurations in *xks.config*, it is time to run some set-up processes.

1. (U//FOUO) At the command prompt, type `xks setup processes` and press Enter. When `cadence=yes` in *xks.config*, this creates `cadence_tasking_proc`. And, if `mailorder=yes`, it will also create the `check_mailorder_site.php` and `mailorder_proc` processes.
2. (U//FOUO) At the command prompt, type `xks proc start` and press Enter. This starts any processes that were created in step 1, `cadence_tasking_proc`, `mailorder_proc` and `check_mailorder_site.php`.
3. (U//FOUO) If a MAILORDER input rule is changed in *xks.config*, then type `xks proc restart cms` to restart the `check_mailorder_site.php` process.

Note: (U//FOUO) The *xks update_dictionaries* cronjob will run once an hour. It reads the *dictionaries* section of the `$XSCORE_DIR/config/xks.config` file and copies the dictionaries and fists from `$XSCORE_DATA_DIR/dictionaries/cadence/dicts` and `../fists` to `$XSCORE_DIR/config/dictionaries/cadence`. This is where the `process_data_parent`'s (i.e., the XKS processes that load dictionaries and do the selection, scanning and forwarding) actually load their dictionaries from.