

# Create a Branch

If you want to continue a run using restart files, and not make any changes to the namelist or source code you should just change `CONTINUE_RUN` to `TRUE` in the `env_run.xml` file and run the case. See step 11 in [Run CAM-Chem on Cheyenne](#) for more details.

If you want to continue a run using restart files and make changes to the namelist or source code you must create a branch. For more information on run types see this link: <https://www.cesm.ucar.edu/models/cesm1.1/cesm/doc/usersguide/c1128.html>

**Preparation:** Make sure you save restart files in your desired frequency. To do this, before you run your reference case (i.e., the case from which you are going to branch) update the following in `env_run.xml`

1. Change the frequency of writing restart files by updating `REST_OPTION` (units) and `REST_N` (number). For example, if you wanted to save restart files every 1 month, change `REST_OPTION = nmonths` and `REST_N = 1`.
2. Change `DOUT_S_SAVE_INTERIM_RESTART_FILES = TRUE`

**Note:** In order to run a branch, you must use restart files for the exact date for which you will start your branched run.

## To create a branch:

1. Create a new case (`$CASENAME_BRANCH`) by cloning your reference case (`$CASENAME_REF`). See [Clone a Case](#) for more details.
2. Before setting-up and building this new case (`$CASENAME_BRANCH`), in `env_run.xml`
  - a. Change the `RUN_TYPE` to `branch`
  - b. Change `RUN_REFDIR` to the directory where you will save the restart files to start the run. Typically this is `<your_output_directory>/$CASENAME_BRANCH/run`
  - c. Change `RUN_REFCASE` to `$CASENAME_REF`. (This must match the case name of your restart files.)
  - d. Change `RUN_REFDATE` to `<start_date_of_branch>`
  - e. Change `STOP_N` (number) and `STOP_OPTION` (units) to the desired run time . For example, `STOP_N = 1` and `STOP_OPTION = nmonths` would run for 1 month.
3. Now if desired, make any namelist or source code changes
4. Set-up and build your case exactly as done in steps 2-8 in [Run CAM-Chem on Cheyenne](#)
5. Copy restart files from your reference case output `<your_output_directory>/archive/$CASENAME_REF/rest/<initial_date_of_run>/*` to `<your_output_directory>/$CASENAME_BRANCH/run/`. These include the restart files themselves and the rpointer files.
6. Run the model.