**How to use Solidity compilter in foundry project on offline environment?**

To use solc with **Foundry** in an offline environment, you need to ensure that both solc and Foundry's tools (such as forge and cast) are installed locally and configured to work offline. Here's how you can set up and use solc in Foundry offline:

**1. Install Foundry Locally**

First, install Foundry and set it up on your system. Foundry’s forge tool provides a streamlined interface for Solidity development and interacts with solc to compile your contracts.

**Installation via Foundryup**

Foundry can be installed via its foundryup script:

curl -L https://foundry.paradigm.xyz | bash

foundryup

This installs Foundry and its tools (forge, cast, anvil).

**2. Install solc Locally**

To ensure that forge works offline, you'll need the Solidity compiler (solc) installed locally, as forge relies on solc to compile contracts.

* You can install solc using npm:

npm install -g solc

* Alternatively, you can download a specific version of solc as a binary from [Solidity's GitHub Releases](https://github.com/ethereum/solidity/releases).

**3. Configure Foundry to Use the Local solc**

Foundry can be configured to use the installed version of solc. You can check which versions are available and set the version manually.

**Checking Available Solc Versions**

You can use solc --version to check if the compiler is available globally.

Alternatively, you can check for available Solidity versions within Foundry:

forge install-solc

This command downloads the necessary version of solc if it's not already installed. If you want to use a specific version offline, ensure it's downloaded beforehand.

**Set Specific Solidity Version in Foundry**

To set a specific version of Solidity for your project, update the foundry.toml file in your project root to specify the solc version:

[profile.default]

solc\_version = "0.8.17" # Use the version that you've installed locally

This tells Foundry to use the specified solc version when compiling.

**4. Using Foundry Completely Offline**

Once you have everything set up locally, you can work offline. To ensure all dependencies are installed and cached, run the following command while still online:

forge update

This will download all necessary libraries and Solidity versions for your project.

If you've already set everything up and want to confirm you’re in an offline environment, you can compile contracts like this:

forge build

Since forge will look for the locally installed solc compiler and cached dependencies, no internet connection is needed.

**5. Compile Contracts Using Forge and Solc Offline**

Once you've set everything up, you can compile your contracts offline. If you're using a specific version of solc, make sure it's set in your configuration (foundry.toml) as described.

Run:

forge build

This will compile all your contracts using the local solc and Foundry's offline environment.

**Summary**

* **Install Foundry (forge, cast, anvil) and solc locally**.
* **Download required dependencies while online** using forge update.
* **Set solc\_version in your foundry.toml file** to use a specific Solidity version offline.
* You can now compile contracts and run Foundry commands offline (forge build, forge test).

With this setup, you're ready to work with Foundry and solc in a fully offline environment.