

# Flake Outputs

In `flake.nix`, the `outputs` section defines the different outputs that a flake can produce during its build process. A flake can have multiple outputs simultaneously, which can include but are not limited to the following:

- Nix packages: These are named `apps.<system>.<name>`, `packages.<system>.<name>`, or `legacyPackages.<system>.<name>`. You can build a specific package using the command `nix build .#<name>`.
- Nix helper functions: These are named `lib.<name>` and serve as libraries for other flakes to use.
- Nix development environments: These are named `devShells` and provide isolated development environments. They can be accessed using the command `nix develop`.
- NixOS configurations: These are named `nixosConfiguration` and represent specific NixOS system configurations. You can activate a configuration using the command `nixos-rebuild switch --flake .#<name>`.
- Nix templates: These are named `templates` and can be used as a starting point for creating new projects. You can generate a project using the command `nix flake init --template <reference>`.
- Other user-defined outputs: These outputs can be defined by the user and may be used by other Nix-related tools.

Here's an example excerpt from the NixOS Wiki that demonstrates the structure of the `outputs` section:

nix

```

1  {
2      inputs = {
3          # .....
4      };
5
6      outputs = { self, ... }@inputs: {
7          # Executed by `nix flake check`
8          checks."<system>."<name>" = derivation;
9          # Executed by `nix build .#<name>`
10         packages."<system>."<name>" = derivation;
11         # Executed by `nix build .`
12         packages."<system>".default = derivation;
13         # Executed by `nix run .#<name>`
14     };

```

```
15 apps."<system>". "<name>" = {
16     type = "app";
17     program = "<store-path>";
18 };
19 # Executed by `nix run . -- <args?>`
20 apps."<system>".default = { type = "app"; program = "..."; };
21
22 # Formatter (alejandra, nixfmt or nixpkgs-fmt)
23 formatter."<system>" = derivation;
24 # Used for nixpkgs packages, also accessible via `nix build .#<name>`
25 legacyPackages."<system>". "<name>" = derivation;
26 # Overlay, consumed by other flakes
27 overlays."<name>" = final: prev: { };
28 # Default overlay
29 overlays.default = {};
30 # Nixos module, consumed by other flakes
31 nixosModules."<name>" = { config }: { options = {}; config = {}; };
32 # Default module
33 nixosModules.default = {};
34 # Used with `nixos-rebuild --flake .#<hostname>`
35 # nixosConfigurations."<hostname>".config.system.build.toplevel must be a de
36 nixosConfigurations."<hostname>" = {};
37 # Used by `nix develop .#<name>`
38 devShells."<system>". "<name>" = derivation;
39 # Used by `nix develop`
40 devShells."<system>".default = derivation;
41 # Hydra build jobs
42 hydraJobs."<attr>". "<system>" = derivation;
43 # Used by `nix flake init -t <flake>#<name>`
44 templates."<name>" = {
45     path = "<store-path>";
46     description = "template description goes here?";
47 };
48 # Used by `nix flake init -t <flake>`
49 templates.default = { path = "<store-path>"; description = ""; };
50 };
```

```
}
```

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