Using Inputs and Outputs

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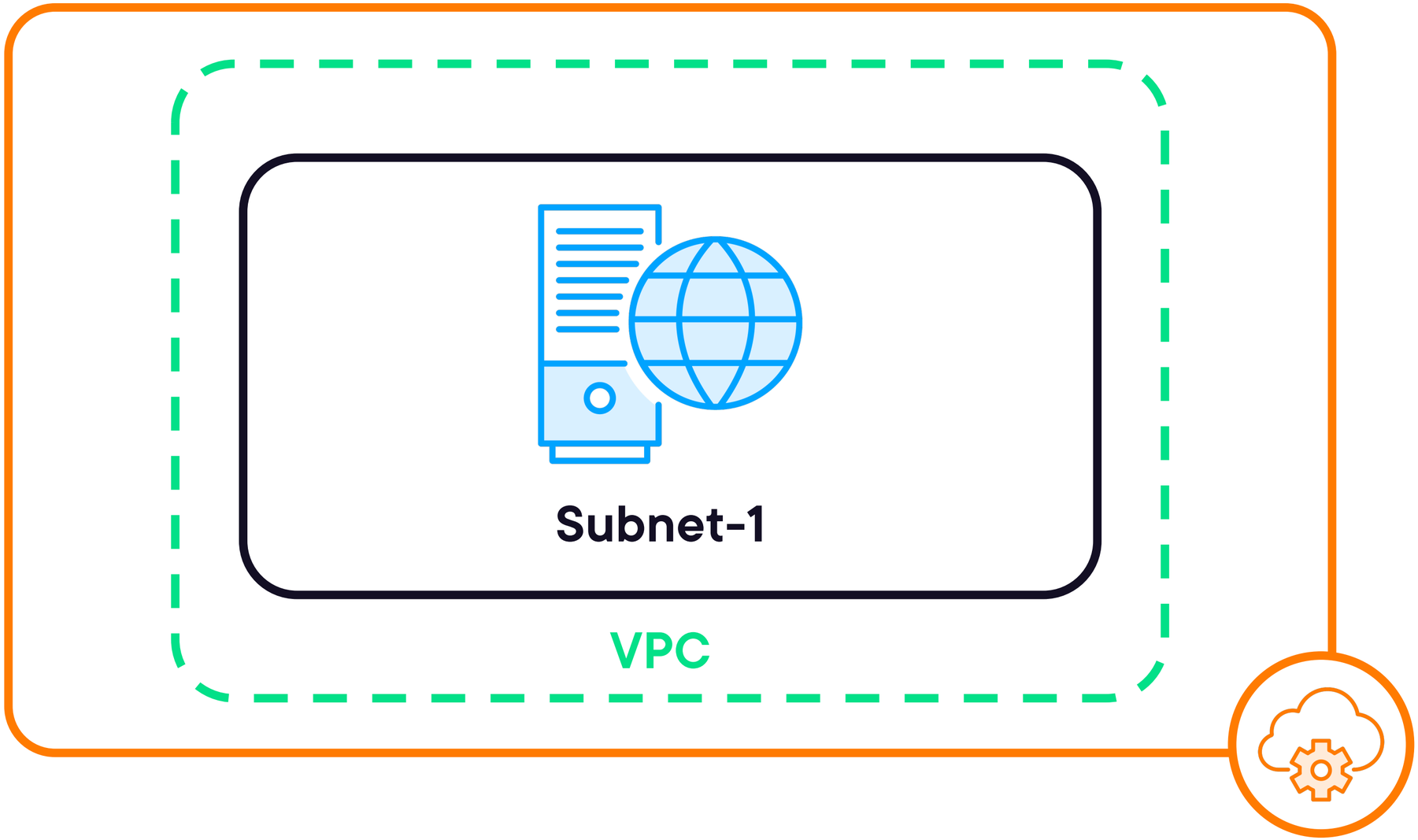
Deployment Architecture



Potential Improvements

Replace hard coded values

Generate output of public DNS hostname

Generate outputs for VPC and subnets

Input Variables

Variable Syntax

main.tf

```
variable "name_label" {}

variable "name_label" {
  type        = value
  description = "string"
  default     = value
}
```

Variable Syntax

main.tf

```
variable "billing_tag" {}

variable "aws_region" {
  type        = string
  description = "Region to use for AWS resources"
  default     = "us-east-1"
}
```

```
variable "aws_region" {
  type        = string
  description = "Region to use for AWS resources"
  default     = "us-east-1"
}
```

Terraform Variable Reference

`var.<name_label>`

`var.aws_region`

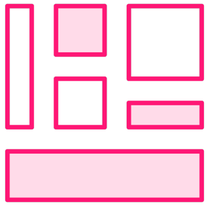
Terraform Data Types

Primitive

String, number, bool

Collection

List, set, map



Structural

Tuple, object

Data Type Examples

```
# List
[1, 2, 3, 4]
["us-east-1", "us-east-2", "us-west-1", "us-west-2"]
[1, "us-east-2", true] # INVALID LIST!

# Map
{
  small  = "t2.micro"
  medium = "t2.small"
  large  = "t2.large"
}
```

```
variable "aws_regions" {
  type        = list(string)
  description = "Regions to use for AWS resources"
  default     = ["us-east-1", "us-east-2", "us-west-1", "us-west-2"]
}
```

Referencing Collection Values

```
var.<name_label>[<element_number>]
var.aws_regions[0]
```

```
variable "aws_instance_sizes" {
  type = map(string)
  description = "Instance sizes to use in AWS"
  default = {
    small  = "t3.micro"
    medium = "m4.large"
    large  = "m4.xlarge"
  }
}
```

Referencing Collection Values

`var.<name_label>.<key_name> or var.<name_label>["key_name"]`

`var.aws_instance_sizes.small or var.aws_instance_sizes["small"]`

Variables to Create

```
# VPC CIDR block

# Enable DNS hostnames

# Subnet CIDR block

# Map public IP on launch

# Ingress port number – no default

# Instance type – no default
```

Output Values

Printed to terminal after apply

Stored in state data

Used by child modules

Outputs Syntax

main.tf

```
output "name_label" {
  value       = value
  description = "string"
}
```

Outputs to Create

```
# VPC ID

# Subnet ID
```

Terraform Format and Validate

```
# Fix formatting to match HCL spec
terraform fmt

# Check syntax and logic
terraform validate
```

Supply Variable Values

Default value

-var flag

-var-file flag

terraform.tfvars

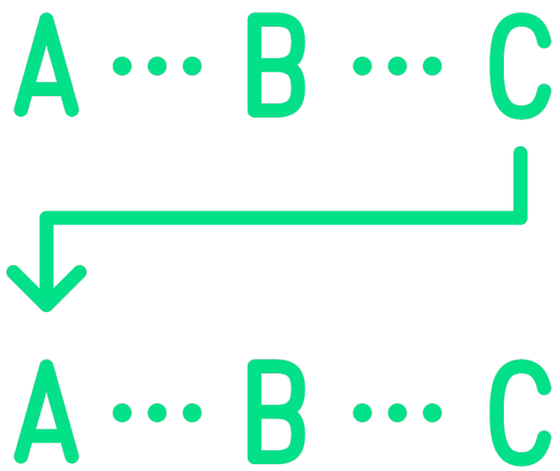
terraform.tfvars.json

*.auto.tfvars

*.auto.tfvars.json

TF_VAR_

Order of Evaluation



TF_VAR_ environment variable

terraform.tfvars or terraform.tfvar.json

.auto.tfvars or .auto.tfvars.json

-var-file flag

-var flag

Command line prompt