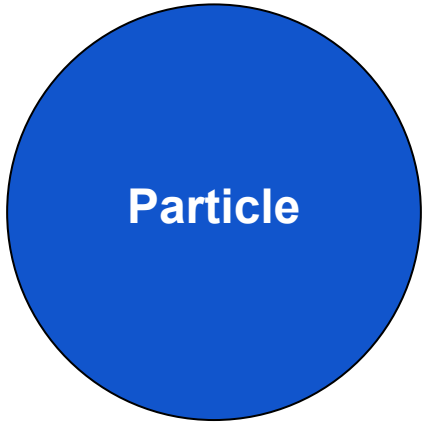
What is Particle Cloud Framework?

Particle Cloud Framework (PCF) is a cloud agnostic resource management framework that is fully customizable and extensible, callable by code, and automatically reconciles resource state. PCF enables the standardization of modeling hierarchical cloud infrastructure, automating deployments, and managing life cycles of cloud resources

Particle Cloud Framework helps you model cloud resources in code

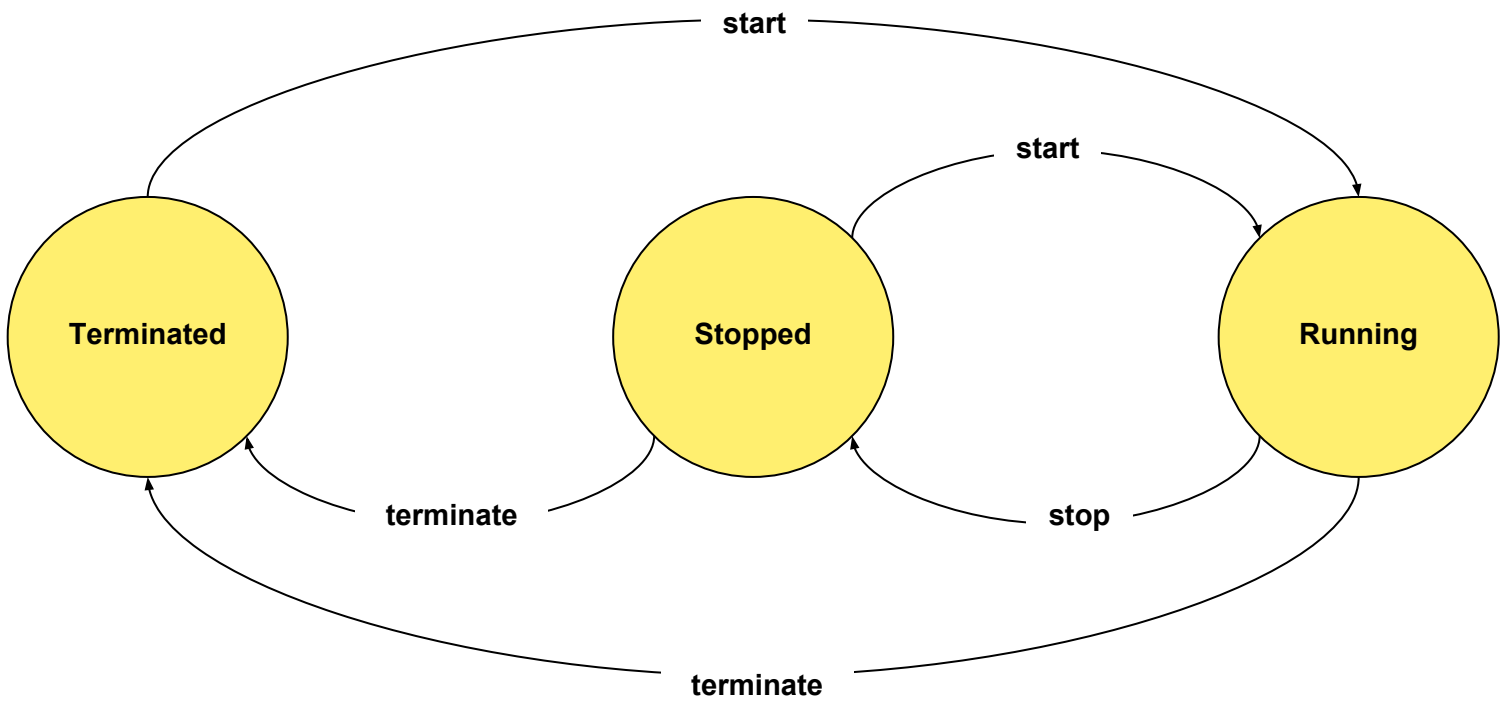


- A ***Particle*** within PCF is an abstract representation of any configurable cloud resource; it is the most basic entity within the framework.

- A ***Particle*** could be any cloud resource such as Compute, Storage, Monitoring, Network, Security, Identity, Managed Service, etc.

- This abstraction allows the management of cloud resources to be generalized by abstracting the management of the resources' lifecycle and configuration

Particles have standardized lifecycles and states. The PCF Framework manages the transition of Particle state by calling the right lifecycle function based on current state and desired state



Any cloud resource can be modelled with a PCF particle; here is an example of how that would be done for Amazon EC2

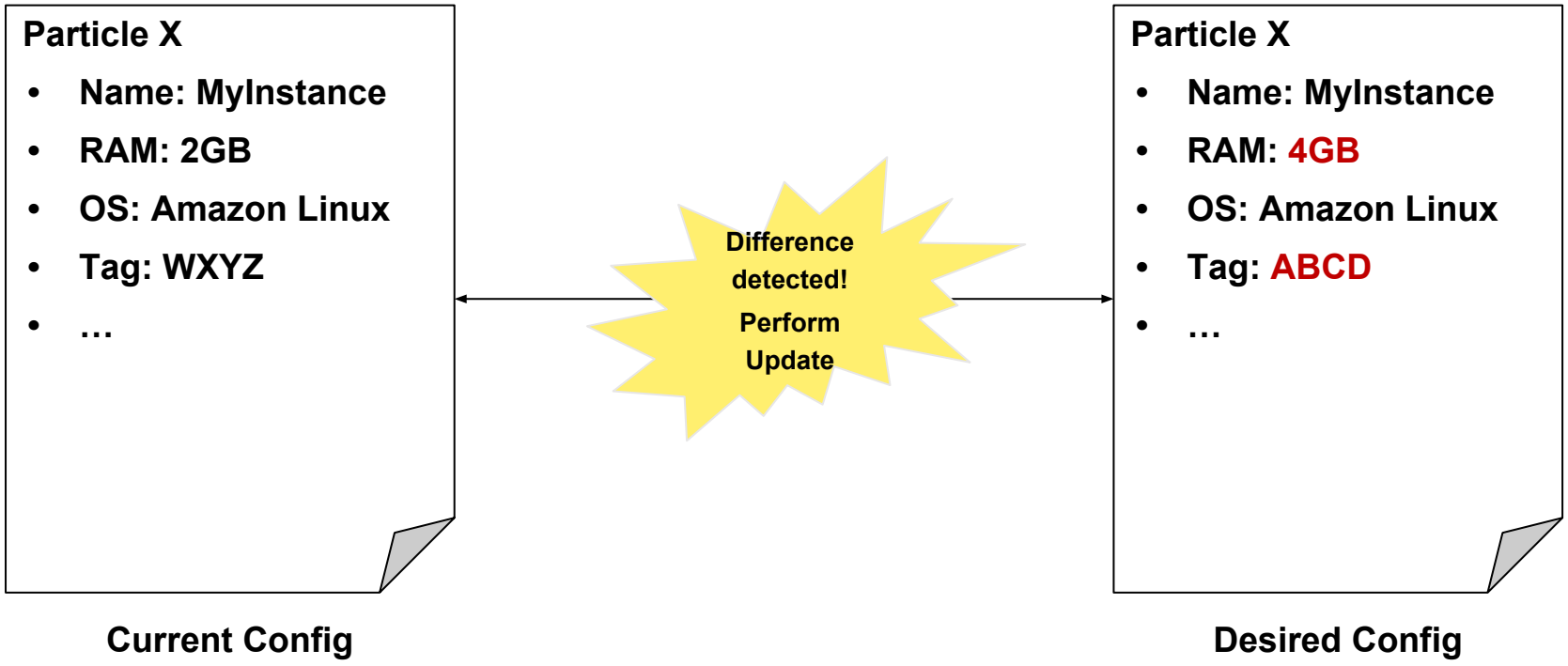
Amazon EC2

Particle State	EC2 Instance State
Terminated	Terminated (or doesn't exist)
Stopped	Stopped
Running	Running

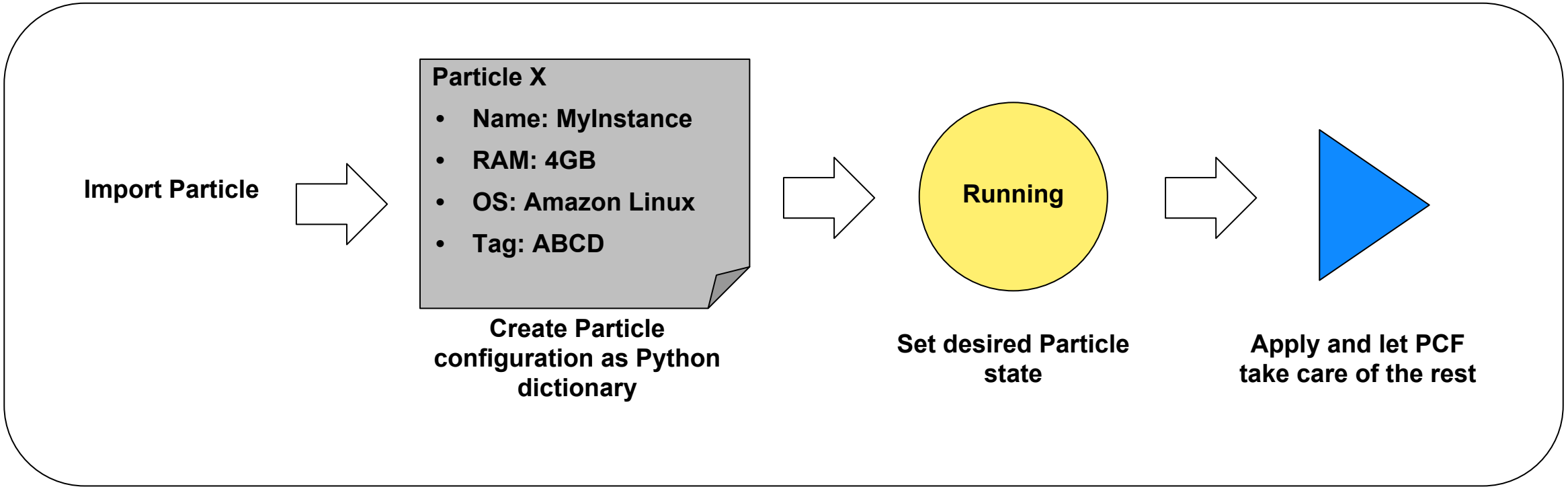
Particle State Transition	Boto3 (AWS SDK) method
start (from stop)	ec2.start_instances
start (from terminated)	ec2.run_instances
stop	ec2.stop_instances
terminate	ec2.terminate_instances

Particle Behavior	Boto3 (AWS SDK) method
Sync State	ec2.describe_instances
Update (without termination)	ec2.run_instances
Update (needs termination)	ec2.terminate_instances

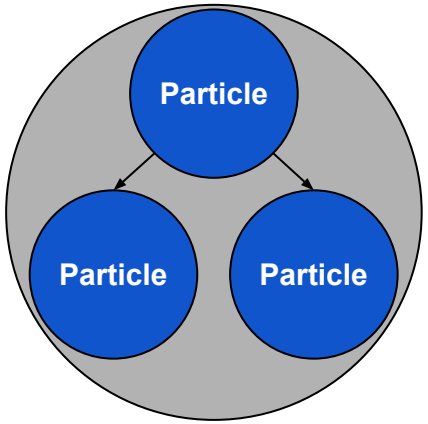
Particle Cloud Framework also manages updating of running Particle



Using a Particle is simple



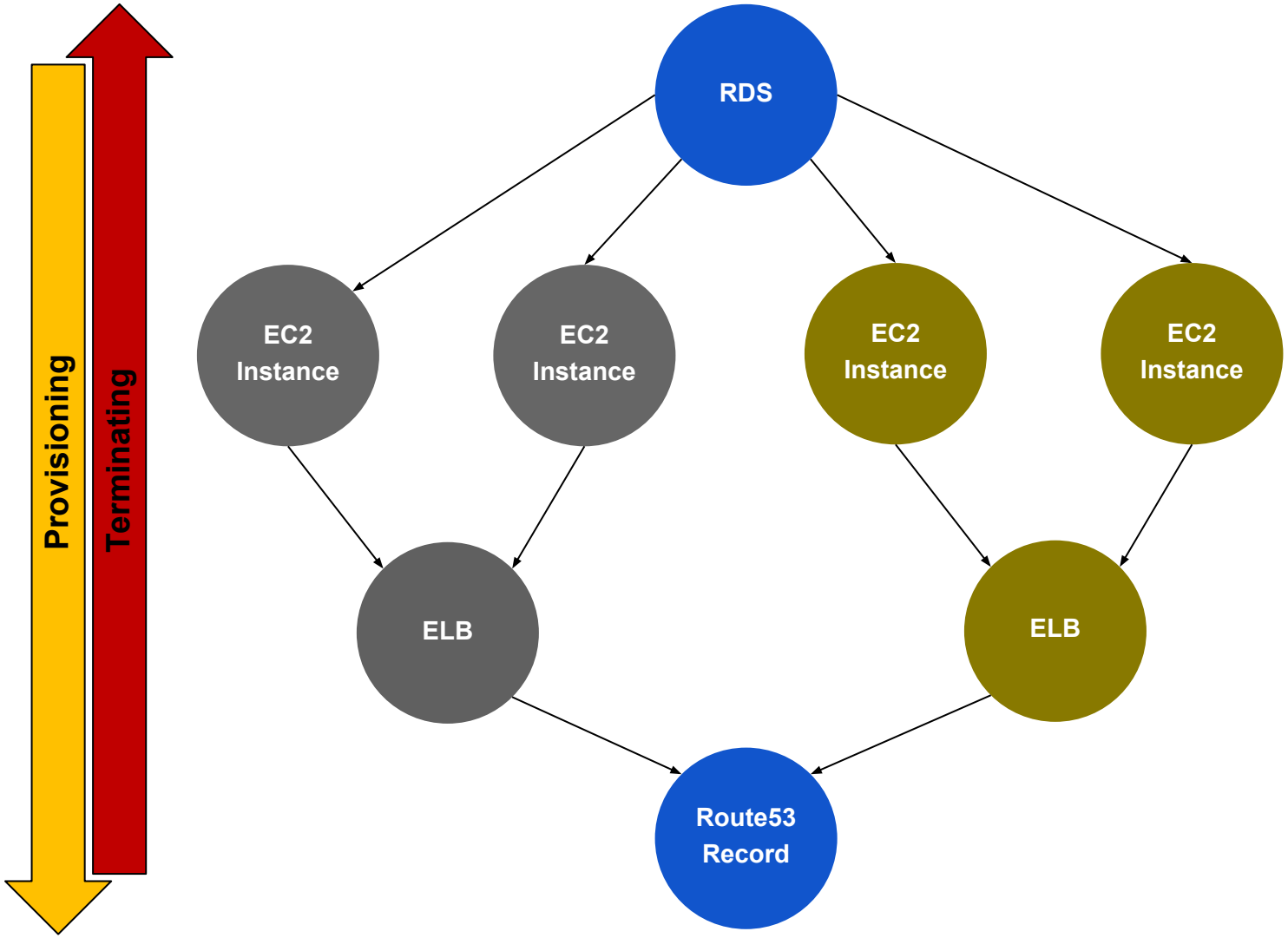
Quasiparticles allow the bundling of particles while still adhering to the particle model



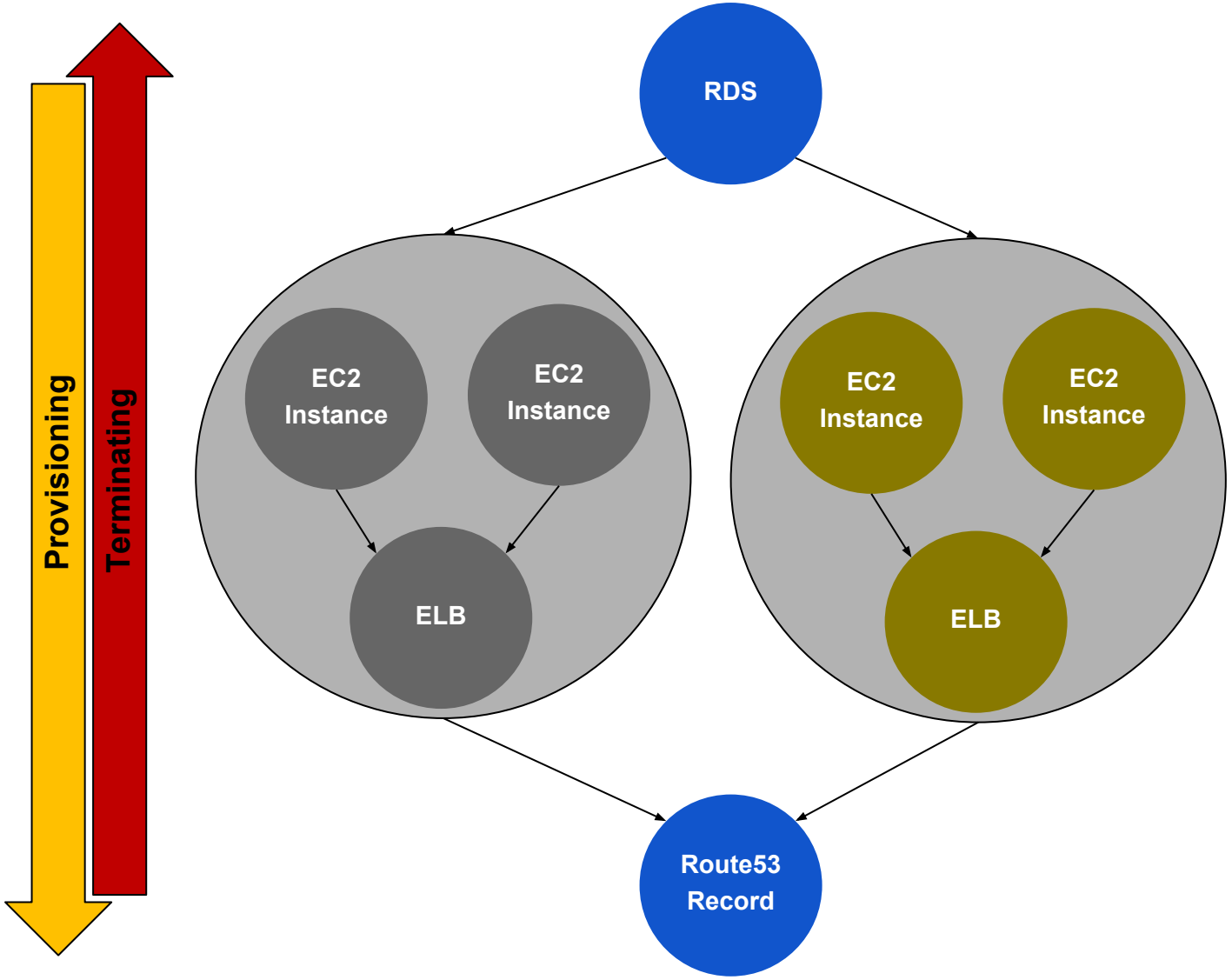
Quasiparticle

- A ***Quasiparticle*** allows for the bundling of sets of particles that are commonly provisioned together without deviating from the particle model
- A ***Quasiparticle*** is a hierarchical grouping of ***Particles***
- These macroscopic particles simplify your overall particle network while still following the same state transition and configuration behavior as a single particle

Quasiparticle example – AWS cross-region Web application infrastructure



You can have Quasiparticles in a Quasiparticle



Using a Quasiparticle is the same as using a Particle