# StatefulSets in kubernetes

Stateful app → Saves client data (state) in one session & uses it in the next session.

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Deployments share PVs among pods

Stateful Sets does not.

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Handle Pods much more delicately than Deployments

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## API Security & RBAC

Authn → Authz → Admission Control

Authentication → Verify credentials

Authorization → Verify if particular action could be done

RBAC (Role based Access Control Model)

which User can perform which actions against which resources

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Both are Namespaced

Roles ← Role Bindings

Roles → Defines a

Role Bindings → Grants the set of permissions (Roles)

Authorization ensures authenticated users are allowed to carry out the actions they're attempting.

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Admission Control → Responsible for enforcing policies.

validating admission controllers → reject request if they do not confirm to Policies

Mutating admission Controllers → modify request to enforce policies.

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## The Kubernetes API

API Server → Kubernetes Control plane service
(runs as a set of Pods on kube-system Namespace on master Nodes)

↓

main job is to make API available for internal & external clients. → Takes care of Authentication & Authorization.

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API is RESTful

↳ Modern web API dealing with CRUD-style requests by HTTP

REST requires verb & a path to resource.

API Server exposes the API over a secure & RESTful interface.

## The API :-

large, modular & RESTful.

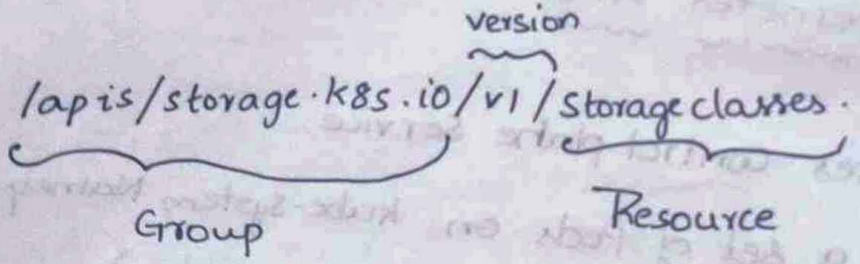
Two types of API group :- The core group, The named groups.

Core Group :-

Fundamental objects like Pods, Services, Nodes, etc.

Named Groups :-

G V R



## Threat Modeling kubernetes :-

STRIDE

* Spoofing
* Tampering
* Repudiation
* Information disclosure
* Denial of Service
* Elevation of Previlige.