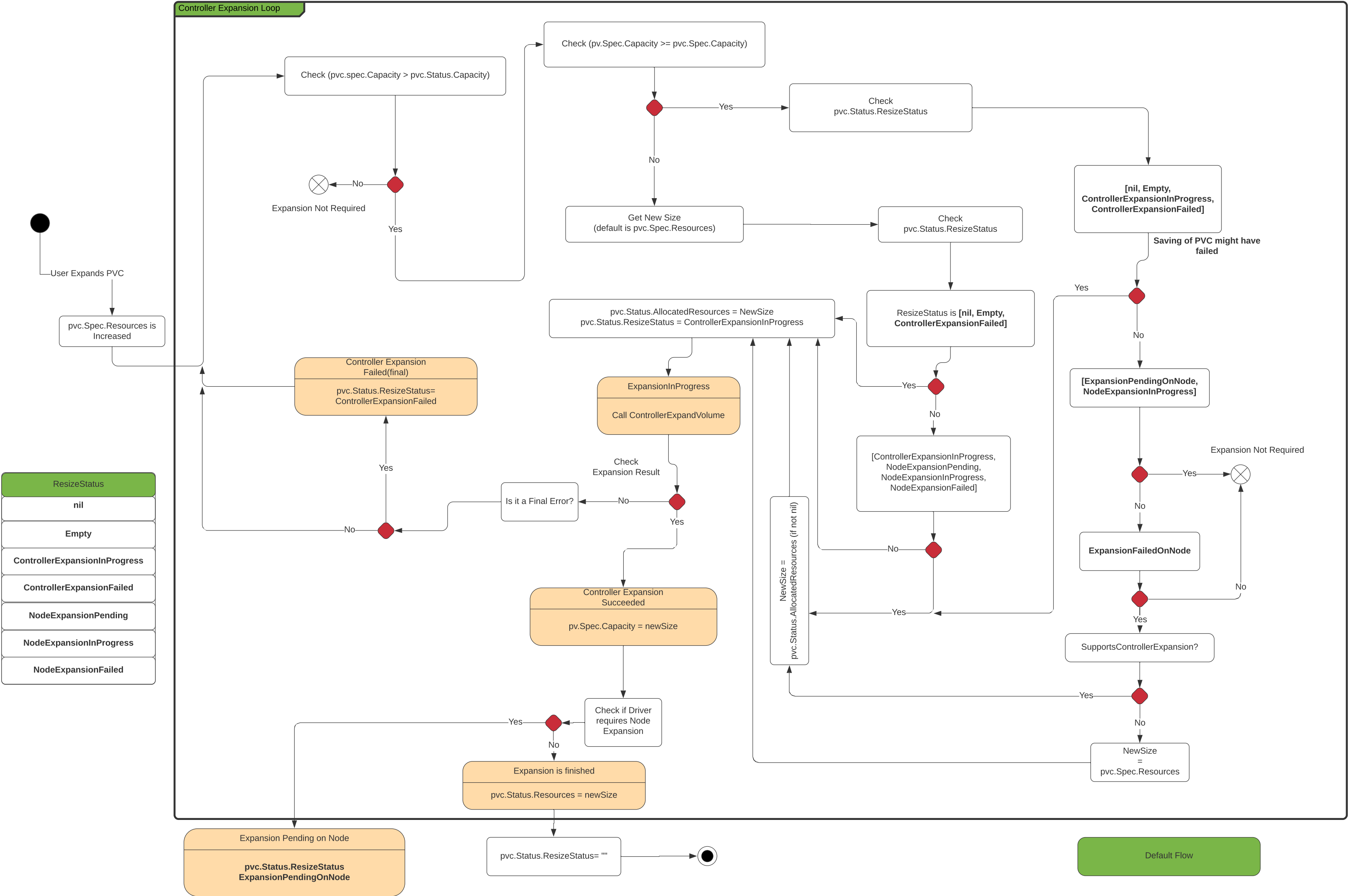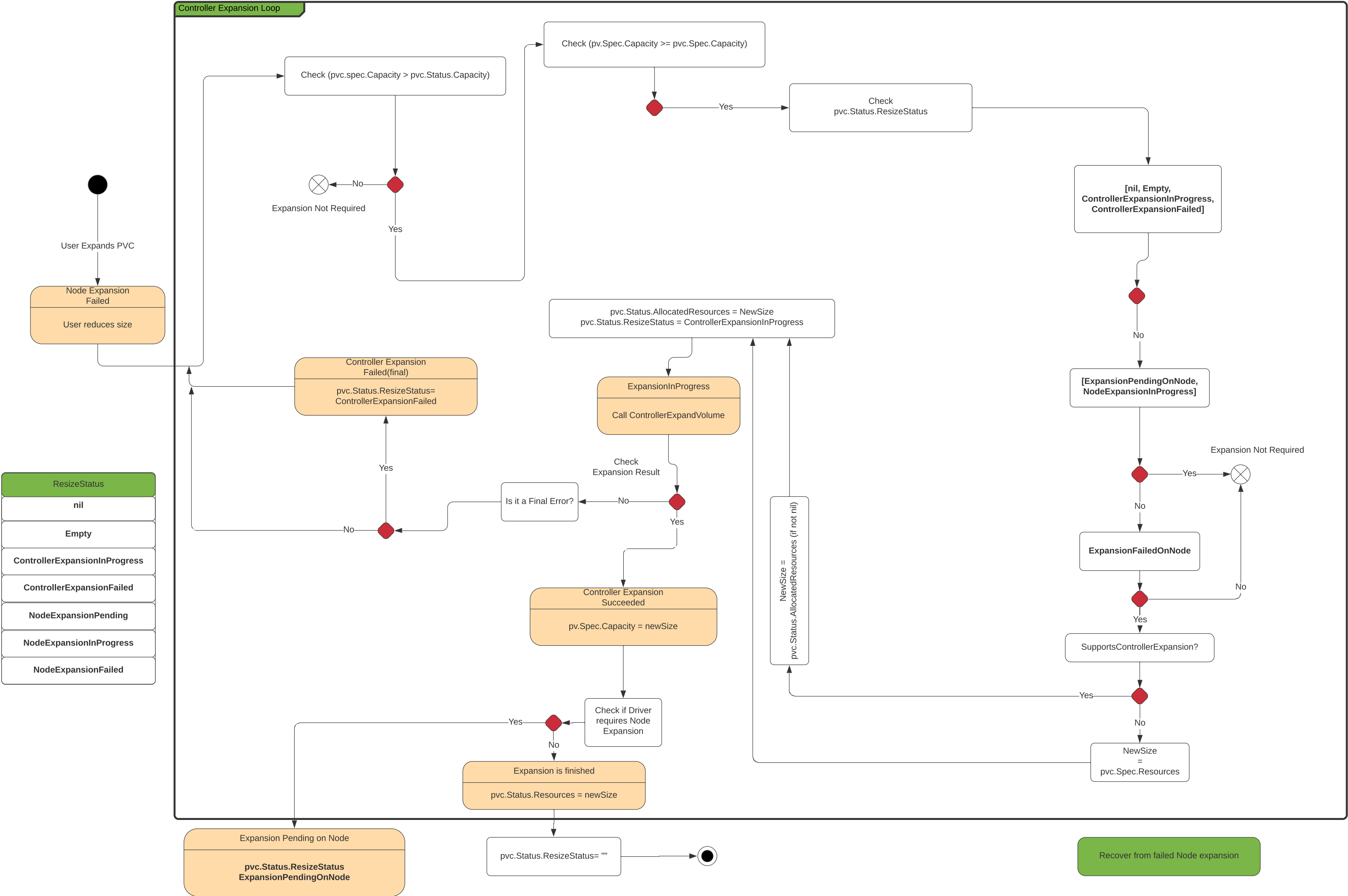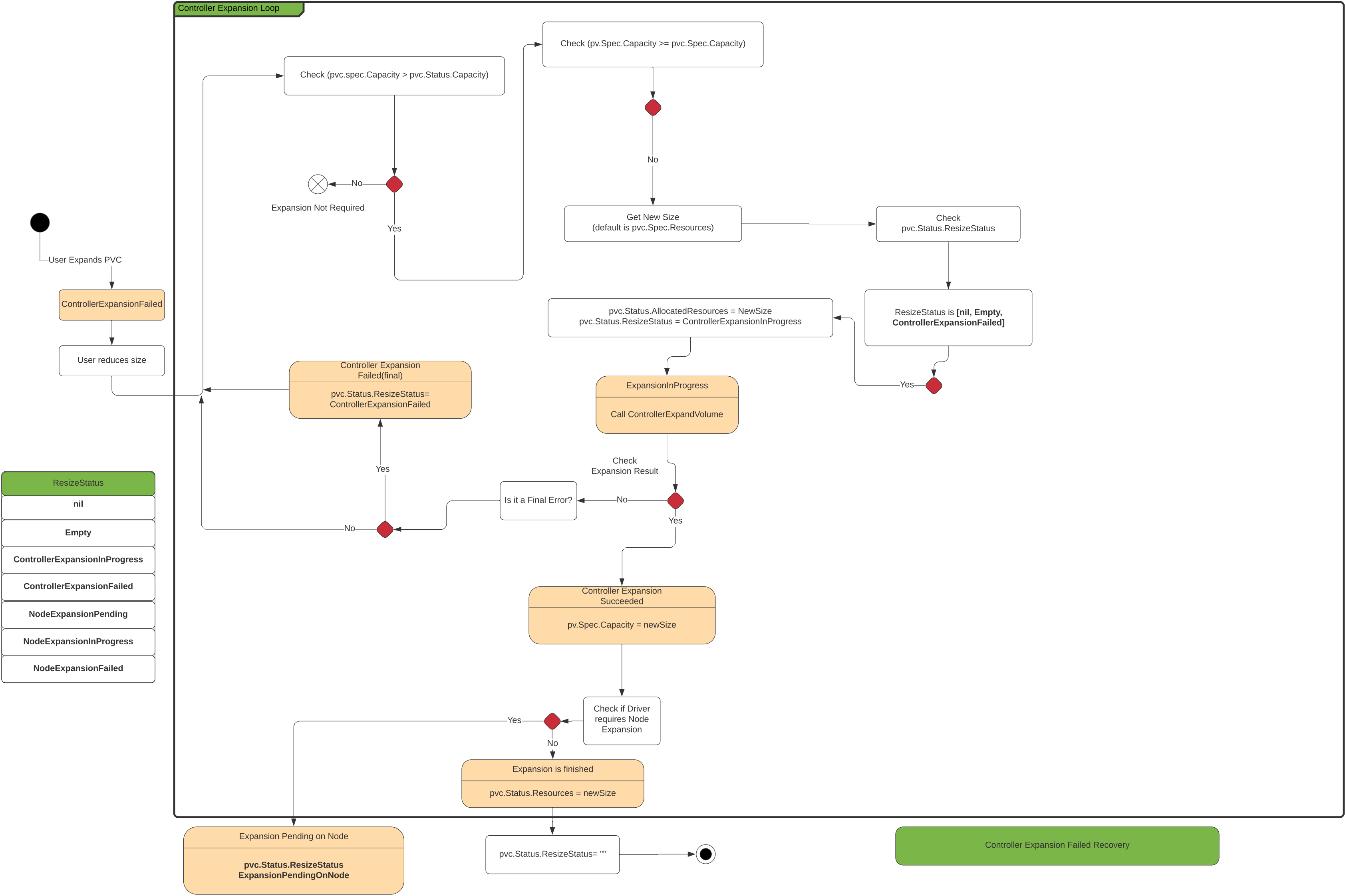| ResizeStatus |
|---|
| nil |
| Empty |
| ControllerExpansionInProgress |
| ControllerExpansionFailed |
| NodeExpansionPending |
| NodeExpansionInProgress |
| NodeExpansionFailed |

Controller Expansion Loop

Check (pv.Spec.Capacity >= pvc.Spec.Capacity)

Check (pvc.spec.Capacity > pvc.Status.Capacity)

Yes → Check pvc.Status.ResizeStatus

No → ⊗ Expansion Not Required

Yes

[nil, Empty, ControllerExpansionInProgress, ControllerExpansionFailed]

User Expands PVC

Node Expansion Failed

User reduces size

No

[ExpansionPendingOnNode, NodeExpansionInProgress]

Controller Expansion Failed(final)

pvc.Status.ResizeStatus= ControllerExpansionFailed

pvc.Status.AllocatedResources = NewSize
pvc.Status.ResizeStatus = ControllerExpansionInProgress

ExpansionInProgress

Call ControllerExpandVolume

Yes → ⊗ Expansion Not Required

No

ExpansionFailedOnNode

Yes

Check Expansion Result

Is it a Final Error? — No

No

Yes

NewSize = pvc.Status.AllocatedResources (if not nil)

ResizeStatus

nil
Empty
ControllerExpansionInProgress
ControllerExpansionFailed
NodeExpansionPending
NodeExpansionInProgress
NodeExpansionFailed

Controller Expansion Succeeded

pv.Spec.Capacity = newSize

SupportsControllerExpansion?

Yes

No

NewSize = pvc.Spec.Resources

Check if Driver requires Node Expansion

Yes

No

Expansion is finished

pvc.Status.Resources = newSize

Expansion Pending on Node

pvc.Status.ResizeStatus ExpansionPendingOnNode

pvc.Status.ResizeStatus= "" ●

Recover from failed Node expansion

Controller Expansion Loop

Check (pv.Spec.Capacity >= pvc.Spec.Capacity)

Check (pvc.spec.Capacity > pvc.Status.Capacity)

No → Expansion Not Required

Yes

No

Get New Size
(default is pvc.Spec.Resources)

Check
pvc.Status.ResizeStatus

ResizeStatus is **[nil, Empty, ControllerExpansionFailed]**

pvc.Status.AllocatedResources = NewSize
pvc.Status.ResizeStatus = ControllerExpansionInProgress

Yes

User Expands PVC

ControllerExpansionFailed

User reduces size

Controller Expansion
Failed(final)

pvc.Status.ResizeStatus=
ControllerExpansionFailed

ExpansionInProgress

Call ControllerExpandVolume

Check
Expansion Result

Yes

Is it a Final Error? → No

No

Yes

No

ResizeStatus

nil

Empty

ControllerExpansionInProgress

ControllerExpansionFailed

NodeExpansionPending

NodeExpansionInProgress

NodeExpansionFailed

Controller Expansion
Succeeded

pv.Spec.Capacity = newSize

Check if Driver
requires Node
Expansion

Yes

No

Expansion is finished

pvc.Status.Resources = newSize

Expansion Pending on Node

**pvc.Status.ResizeStatus
ExpansionPendingOnNode**

pvc.Status.ResizeStatus= ""

Controller Expansion Failed Recovery