Cluster Startup and Shutdown Cheat Sheets

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Abstract	This document provides cheat sheets for the steps in the startup and shutdown of an Appway cluster. It can be used for troubleshooting startup or shutdown issues.

1 System Startup Cheat Sheet

	Step	Description	Log Message
Before start of cluster service	Start	Application Server and Appway are started	
	Data Home	Find and validate data home	
	Log4j	Configure Log4j	
	Application Service	Start application service	
	UID generator	Initialize UID generator	
	Configuration	Load and validate configuration	
	ESAPI	Initialize OWASP Enterprise Security API (ESAPI)	
	Cluster Map Config Service	Start cluster map config service	
	Plugins	Start plugins	
Start of cluster service	Hazelcast	Create Hazelcast instance. Maps and map stores are initialized. Hazelcast listeners are created.	Hazelcast instance 'appway' created.
	Startup State	If any other node is RUNNING, set joining flag. If any other node is STOPPING or DONE, stop as well	
	Init Latch*	Try to set the init latch. The node acquiring the init latch continues, the others wait until the first node releases the init latch.	"Init latch set."/"Waiting for init latch…"
	Max Cluster Size	Assert max cluster size defined by license is respected. Stop non-licensed nodes.	
	Cluster Storage	Connect to cluster storage and load data on maps without eviction (first node only)	"Connected to cluster data."
	Lock Pool	Create lock pool for process instances	"Cluster service ready."
After start of cluster service	Cluster Log Service	Start cluster log service and compact left-over blocks (first node only)	"start-up phase 1 done."
	Master Password	Find master password	
	Services	Start all services not started so far	
	Extensions	Start extensions	
	Process Engine	Start process engine	
	Application Started	Fire application started event	
	Application State RUNNING	Set application state to RUNNING	
	Release Init Latch*	All other nodes continue and finish their startup.	"start-up phase 2 done."

*The steps between "Init Latch" and "Release Init Latch" are executed exclusively by the first node, and then in parallel by all other nodes.

2   System Shutdown Cheat Sheet

	Step	Description	Log Message
Before start of cluster service	Shutdown Command	Publish cluster shutdown on one node, e.g., via REST {URL}/rest/cluster/shutdown	
	Shutdown	Shutdown listener is called on each node, and the application state is set to STOPPING	
	Process Data Service	Stop process data service	
	Fire Event	Fire application shutdown event	
	Extensions	Stop extensions	
	Cluster Log Service	Stop cluster log service	
Before start of cluster service	Flush	Flush all dirty map entries and wait until everything is saved, but at most two minutes	
	Sync 1	Synchronize on all cluster nodes, but wait at most three minutes to do so	
	No Persistence	Disable persistent storage	"Hazelcast map stores disabled."
	Sync 2	Synchronize on all cluster nodes	
	Hazelcast	Shutdown Hazelcast node	"Hazelcast shutdown done (node detached)."
After CS	Plugins	Stop plugins	"Appway will soon be stopped, but Application Server might continue running"
	App Server	Stop application server on each node	