FirstGen and NextGen CD feature parity matrix

The following table lists the differences between Harness FirstGen (FG) and NextGen (NG) capabilities. It also lists whether the capability can be migrated or needs to be recreated.

For more information, go to Upgrading CD and the migrator tool.

Domain	Capability	FirstGen	NextGen	Migration Tool Support	Migration Path
Account	Account Default	✅	✅	**YES**	• NG account variables use the format `<+variables.account.[var_id]>` • `${account.defaults.var_id}` (FG) -> `<+variables.account.[var_id]>` (NG)
	Resource Constraints	✅	✅	**NO** - User can create a Pipeline and add a queuing as a step	N/A
	Tag Management	✅	❌	**NO** - No Centralized Tag Management, however customers can have tags for each entity.	• Application tag `<+project.tag.[var_id]>` • Service tags `<+service.tags.[var_id]>` • Environment tags `<+env.tags.[var_id]>`
	Application Stacks	✅	❌	**NO** - We are not carrying over Application Stacks from FG	N/A
Delegate	Kubernetes	✅	✅	**NO** - Delegates will not be migrated over to NG	N/A
	SSH	✅	❌	**NO** - Delegates will not be migrated over to NG	N/A
	ECS	✅	❌	**NO** - Delegates will not be migrated over to NG	N/A
	Helm	✅	✅	**NO** - Delegates will not be migrated over to NG	N/A
	Docker	✅	✅	**NO** - Delegates will not be migrated over to NG	N/A
Cloud Provider	Azure	✅	✅	**YES**	Azure Environment (FG) Azure Environment U.S. Government (FG) U.S. Government TenantID (FG) Tenant ID Client ID (ApplicationID) (FG) ApplicationID Usage Scoping **Will Not Migrate Over** Delegate Selectors **Will Not Migrate Over**
	GCP	✅	✅	**YES**	Inherit From Delegate (FG) Inherit Credentials from Delegate Use Encrypted Key (FG) Specify Credential w/ a Service Account Secret Usage Scoping **Will Not Migrate Over** Delegate Selectors **Will Not Migrate Over**

	AWS	✅	✅	YES	Assume STS Role (FG) Assume STS Role Role ARN (FG) Cross account role ARN External Id (FG) External Id Override Default Region (FG) Test Region Assume IAM Role on Delegate (FG) Assume IAM Role on Delegate Use IRSA (FG) Use IRSA Enter AWS Access Keys Manually (FG) AWS Access Key Usage Scoping **Will Not Migrate Over** Delegate Selectors **Will Not Migrate Over**
	Kubernetes	✅	✅	YES	
	Tanzu Application Services (CloudFoundry)	✅	✅		
	Physical Datacenter	✅	✅		
	SpotInst	✅	🚧 - End of Q4 2022		
	Rancher	✅	🚧 Q1 2023		
Template Library - Account	Shell Script	✅	✅	YES	
	HTTP Step	✅	✅	YES	
	CF Command	✅	❌		
	Service Command	✅	✅	YES	Service Commands in FG moved as first class pipeline steps in NextGen.
	Artifact Source	✅	✅	YES	
Service Deployment Type	Kubernetes	✅	✅	YES	The Service Deployment Type attribute will migrate with the Service from FG to NG (Kubernetes encompasses Kustomize, OpenShift, Helm, and Kubernetes).
	Kustomize	✅	✅	YES	The Service Deployment Type attribute will migrate with the Service from FG to NG (Kubernetes encompasses Kustomize, OpenShift, Helm, and Kubernetes).
	Openshift	✅	✅	YES	The Service Deployment Type attribute will migrate with the Service from FG to NG (Kubernetes encompasses Kustomize, OpenShift, Helm, and Kubernetes).
	Native Helm	✅	✅	YES	If a Native Helm Service is configured in FG the upgraded service in NG will retain that property.
	ECS	✅	🚧	NO	
	Tanzu Application Services (CloudFoundry)	✅	❌		
	Amazon ECS	✅	🚧	NO	
	AMI/ASG	✅	❌		
	CodeDeploy	✅	❌		
	SSH	✅	✅	YES	
	WinRM	✅	✅	YES	

	Azure Web App	✅	✅	**YES**	
	Azure VMSS	✅	🚧 Q1 2023		
	SpotInst	✅	🚧 Q4 2022		
Connectors	Git	✅	✅	**YES**	
	Github	✅	✅	**YES**	
	Gitlab	✅	✅	**YES**	
	Bitbucket	✅	✅	**YES**	
	JIRA	✅	✅	**YES**	
	ServiceNow	✅	✅	**YES**	
	Docker	✅	✅	**YES**	
	Artifactory - Docker, Non-Container	✅	✅	**YES**	
	Nexus - Docker, Non-Container	✅	❌	**YES**	
	Jenkins	✅	✅	**YES**	
	Bamboo	✅	❌		
	Helm HTTP	✅	✅	**YES**	
	Azure Artifacts	✅	❌		
	Custom Artifact Source	✅	✅	**YES**	
Verification Providers	Prometheus	✅	✅	**YES**	
	AppDynamics	✅	✅	**YES**	
	Datadog	✅	✅	**YES**	
	ELK	✅	✅	**NO**	
	Splunk	✅	✅	**YES**	
	Custom Metrics Provider	✅	✅	**NO**	
	NewRelic	✅	✅	**YES**	
	Cloud Monitoring (Cloudwatch)	✅	✅	**NO**	
	Custom Log Provider	✅	✅	**NO**	
	Stackdriver	✅	✅	**YES**	
	Dynatrace	✅	✅	**YES**	
	SumoLogic	✅	❌	**YES**	
	Bugsnag	✅	❌	**NO**	
	Logz.io	✅	❌	**NO**	
	Instana	✅	❌	**NO**	
	Jira Integration	✅	✅	**YES**	

	Log Feedback	✅	❌	NO	
	Deeplinking to verification providers	✅	❌	NO	
Application	Application Defaults	✅	✅	YES	Application Defaults are going to become NG project settings.
	Mandate Webhook Secrets for Github Triggers	✅	✅	NO	Added to the NG project settings.
	Template Library	✅	✅	YES	Template Library at the project scope.
	Event Rules	✅	❌		
	Service	✅	✅	YES	
	Environment	✅	✅	YES	
	Workflow	✅	❌	YES	NG stages.
	Pipeline	✅	✅	YES	
	Trigger	✅	✅	NO	We will not migrate FG triggers. Triggers must be recreated in NG.
	Infrastructure Provisioner	✅	✅	NO	Infrastructure Provisioners are now stage steps.
Template Library - Application	Shell Script	✅	✅	YES	
	HTTP Step	✅	✅	YES	
	CF Command	✅	❌		
	Service Command	✅	✅	YES	
	Artifact Source	✅	✅	YES	
Service	Artifact from Manifest	✅	❌	YES	
	Enable Kubernetes V2	✅	❌		Kubernetes V2 is the default in NG. There is no longer a Kubernetes V1.
	Inline Manifests	✅	✅	YES	
	Remote Manifests	✅	✅	YES	
	Custom Remote Manifests	✅	✅	YES	
	Upload Inline Manifests	✅	✅	YES	
	Config Variables	✅	✅	YES	
	Config Files	✅	✅	YES	
	Values YAML Override	✅	✅		
	Artifact History	✅	❌		
Environment	Infra Definition	✅	✅	YES	
	Scope to Specific Service	✅	❌		
	Service Configuration Override - Variable	✅	✅		

	Service Configuration Override - Values.yaml	✅	✅		
	Service Configuration Override - Application Setting	✅	✅		
	Service Configuration Override - ConfigMap YAML	✅	❌		
	Service Configuration Override - Connection String (Inline)	✅	✅		
	Service Configuration Override - Connection String (Remote)	✅	✅		
	Service Configuration Override - ConfigMap YAML	✅	❌		
	Service Configuration Override - File Override	✅	✅		
	Service Configuration Override - OpenShift Params	✅	✅		
	Service Configuration Override - TAS Manifest	✅	❌		
	Service Configuration Override - Helm Chart Repo	✅	❌		
Workflow	Basic	✅	✅	YES	1 deployment stage in a pipeline that performs a basic deployment (SSH, WinRM, PCF, Azure VMSS, Azure Web APP, Helm). `${workflow.variables.[var]} <+pipeline.variables.[var]>`
	Canary	✅	✅	YES	1 deployment stage in a pipeline that performs a Canary deployment. `${workflow.variables.[var]} <+pipeline.variables.[var]>`
	Blue-Green	✅	✅	YES	1 deployment stage in a pipeline that performs a Blue Green deployment. `${workflow.variables.[var]} <+pipeline.variables.[var]>`
	Rolling	✅	✅	YES	1 deployment stage in a pipeline that performs a Rolling deployment. `${workflow.variables.[var]} <+pipeline.variables.[var]>`
	Multi Service	✅	❌	NO	First class multi service deployment capability in NG doesn't leverage the FG multi service behavior.

	Build	✅	❌	**YES**	1 custom stage in a pipeline wtih the steps used from the Build Workflow. Now Build Stages are replaced by NG Custom Stage or a CIE stage. `${workflow.variables.[var]} <+pipeline.variables.[var]>`
Pipeline	Option to Skip Step - Do Not Skip	✅	✅	**YES**	NG Stage-level setting.
	Option to Skip Step - Always Skip	✅	✅	**YES**	NG Stage-level setting.
	Option to Skip Step - Based on Assertion	✅	✅	**YES**	NG Stage-level setting.
	Approval Step	✅	✅		
	Execution Step	✅	✅		
	Execute in Parallel with Previous Step	✅	✅	**YES**	
Trigger	On New Artifact	✅	✅	**NO**	Users will need to recreate their triggers in NG.
	On Pipeline Completion	✅	🚧	**NO**	We are replacing this with pipeline chaining.
	On Time Schedule	✅	✅	**NO**	Users will need to recreate their triggers in NG.
	On Webhook Event	✅	✅	**NO**	Users will need to recreate their triggers in NG.
	On Manifest Changes	✅	✅	**NO**	Users will need to recreate their triggers in NG.
	Last Collected	✅	❌	**NO**	Users will need to recreate their triggers in NG.
	Last Successfully Deployed	✅	❌	**NO**	Users will need to recreate their triggers in NG.
	From Triggering Source	✅	✅	**NO**	Users will need to recreate their triggers in NG.
	Webhook Authorization	✅	🚧	**NO**	
	Webhook Authentication	✅	🚧	**NO**	
Secrets Manager	AWS KMS	✅	✅	**YES**	
	AWS Secrets Manager	✅	✅	**YES**	
	Azure Key Vault	✅	✅	**YES**	
	Google KMS	✅	✅	**YES**	
	Google Secrets Manager	✅	🚧		
	HashiCorp Vault	✅	✅	**YES**	
	Custom Secrets Manager	✅	✅		
	HashiCorp Vault - SSH Secrets Engine	✅	❌		
Secrets	Encrypted Text	✅	✅		
	Encrypted Files	✅	✅		

	SSH	✓	✓		
	WinRM Credential	✓	🚧		
	Direct access to secrets in YAML	✓	🚧		
	Setup Usage	✓	✓		
	Runtime Usage	✓	✗		
User Management	Users - UI, API, SCIM and LDAP	✓	✓		
	User Groups - UI, API, SCIM and LDAP	✓	✓		
Access Control	RBAC on entities	✓	✓	NO	
	Scope to applications	✓	✗	NO	
	API Keys	✓	✓	NO	
	IP Whitelist Management	✓	✗	NO	
	Consolidated view of entities	✓	✗	NO	
Audit Trails	CRUD operations	✓	✓	NO	
	YAML Diff	✓	✓	NO	
Authentication Settings	OAuth Provider-Github	✓	✓	NO	
	OAuth Provider-Bitbucket	✓	✓	NO	
	OAuth Provider-Gitlab	✓	✓	NO	
	OAuth Provider-Linkedin	✓	✓	NO	
	OAuth Provider-Google	✓	✓	NO	
	OAuth Provider-Azure	✓	✓	NO	
	SAML based SSO	✓	✓	NO	
	LDAP based Auth	✓	✓	NO	
	LDAP - CRON expression for scheduling	✓	🚧	NO	
	Password Policy - Quality	✓	✓	NO	
	Password Policy - Expiration	✓	✓	NO	
	Password Policy - Lockout Policy	✓	✓	NO	
	Security Options - Enforce Two Factor Authentication	✓	✓	NO	
	Security Options - Restrict users to email domains	✓	✓	NO	
	Local Login	✓	✓	NO	

Category	Feature				Notes
Kubernetes	Rolling Deployment Step	✅	✅		
	Blue Green Deployment	✅	✅		
	Canary Deployment	✅	✅		
	Traffic Shifting With Istio	✅	✅	NO	NG support with a Kubernetes Apply step. Service YAML now provides traffic percentage. No longer using Istio integration.
	Traffic Shifting without Istio	✅	✅	YES	NG support with a Kubernetes Apply step. Service YAML now provides traffic percentage.
	Support Multiple Values.yaml for the Service	✅	✅	YES	In the Service Configuration we can add multiple values.yaml files to the service.
	Kubernetes Apply Step Apply From service configuration YAML	✅	✅	YES	We will migrate the step over as is.
	Kubernetes Apply Step Apply Inline YAML	✅	✅	YES	
	Kubernetes Apply Step Apply Remote	✅	✅	YES	
	CRD Deployments	✅	✅	YES	We can deploy CRDs today with our regular Kubernetes steps.
	Rancher Deployment	✅	❌		
	Kubernetes Dry-Run	✅	⚠️ - Not applicable.	NO	A separate step in NG.
	Custom Remote Manifests	✅	✅	NO	
Native Helm	Version 2	✅	✅	YES	These configurations are defined in the service.
	Version 3	✅	✅	YES	These configurations are defined in the service.
	Helm Basic Deployment	✅	✅	YES	It will now become a Helm Rolling deployment. We will migrate over the Helm Deploy step.
	Custom Remote Manifests	✅	✅	YES	
	Helm Command Flags	✅	✅	YES	These configurations are defined in the service.
Kustomize	Patches Support	✅	✅	YES	
	Rolling	✅	✅	YES	
	Canary	✅	✅	YES	
	Blue-Green	✅	✅	YES	
Openshift	Rolling	✅	✅	YES	
	Canary	✅	✅	YES	
	Blue-Green	✅	✅	YES	

Category	Feature				Notes
	Custom Remote Manifests	✅	✅		
Amazon ECS	Rolling	✅	🚧	NO	These capabilities are replaced by the new ECS behavior.
	Canary	✅	🚧	NO	These capabilities are replaced by the new ECS behavior.
	Blue-Green	✅	🚧	NO	These capabilities are replaced by the new ECS behavior.
	ECS Service Setup	✅	❌	NO	These capabilities are replaced by the new ECS behavior.
	ECS Steady State Check	✅	❌	NO	These capabilities are replaced by the new ECS behavior.
	Run Task	✅	🚧	NO	These capabilities are replaced by the new ECS behavior.
	Upgrade Container Step	✅	❌	NO	These capabilities are replaced by the new ECS behavior.
	Visualization of Task Definition	✅	❌		Enhanced to view TaskDefinition with native experience in Harness File Store.
Amazon AMI/ASG	Rolling	✅	🚧		
	Canary	✅	🚧		
	Blue-Green	✅	🚧		
Amazon Lambda	Basic	✅	❌	NO	Will be redesigned.
Amazon CodeDeploy	Basic	✅	❌		
Tanzu App Services (CloudFoundry)	Rolling	✅	✅		
	Canary	✅	✅		
	Blue-Green	✅	✅		
	Custom Remote Manifest	✅	✅		
	Charles Schwab - PCF Deployment Behaviors	✅	✅		
Azure VMSS	Rolling	✅	🚧		
	Canary	✅	🚧		
	Blue-Green	✅	🚧		
Azure Web Apps	Rolling	✅	✅		
	Canary	✅	✅		
	Blue-Green	✅	✅		
Deployment Templates	Deployment Template	✅	✅		
Infrastructure Provisioners	Terraform	✅	✅	NO	We are moving away from the construct of infrastructure provisioners. They are now just steps in a pipeline.
	Terraform Apply	✅	✅	YES	The provisioner configuration will be mapped to the Terraform Apply step.

	Terraform Provision	✔	✖	NO	Terraform Provision was very similar to Terraform Apply, we now removed the redundancy. Terraform Plan, Terraform Apply, Terraform Destroy. The provisioner configuration is mapped to the steps.
	CloudFormation	✔	✔	NO	We are moving away from the construct of infrastructure provisioners. They are now just steps in a pipeline.
	Cloudformation Create Stack	✔	✔	YES	
	CloudFormation Delete Stack	✔	✔	YES	
	Shell Script Provisioner	✔	✔	NO	We are moving away from the construct of infrastructure provisioners. They are now just steps in a pipeline.
	Terragrunt	✔	✔	NO	We are moving away from the construct of infrastructure provisioners. They are now just steps in a pipeline.
	Azure ARM /Blueprint	✔	✔	NO	We are moving away from the construct of infrastructure provisioners. They are now just steps in a pipeline.
Governance	Pipeline Governance v1	✔	✔	NO	We are not migrating the old pipeline Governance experience over. NG uses a new OPA-based Policy as Code feature.
	Deployment Freeze	✔	✔		
Orchestration Behaviors	Multi Infrastructure Deployments	✔	✔	NO	Users will move to the new version of multi Infrastructure deployments in NG. The configuration and design is different.
	Execution Inputs	✔	🚧		
Dashboards	Custom Dashboards	✔	✔	YES	We will keep the existing FG data available as long as its within the retention period. Custom Dashboards pointing to FG data will remain visible to the user.
	Service Dashboard	✔	✔	NO	We are not migrating the Service Dashboard data from FG to NG.
	Environment Dashboard	✔	✔	NO	We are not migrating the Service Dashboard data from FG to NG.
Steps	Barrier	✔	✔		
	Email	✔	✔		
	Shell Script	✔	✔		PowerShell support for scripting is in progress.
	Approval - Harness	✔	✔		
	Jira Create	✔	✔		
	Jira UPDATE	✔	✔		
	ServiceNow Create	✔	✔		Support for import sets is in progress.
	ServiceNow Update	✔	✔		
	Jenkins	✔	✔		
	Bamboo	✔	✖		
	Google Cloud build	✔	✖		
	Resource Consraint	✔	✔		

Stage: Approval	ServiceNow	✅	✅		
	JIRA	✅	✅		
	Harness	✅	✅		
	Custom Approval	✅	✅		
APIs	GraphQL API	✅	❌	REST API	We will not be migrating the customer API-based tools. Customers will need to rebuild around our new REST API. Harness is no longer exposing a GraphQL API to our customers.
	API Endpoints	✅	❌	REST API	Not all endpoints will be migrated over because the objects either don't exist in NG or the construct is different. Users need to recreate their automation to leverage the new endpoints. Users will need to communicate via REST.
Git Experience	GitHub - Saas and Enterprise	✅	✅	NO	
	Bitbucket - SaaS and On-Prem	✅	✅	NO	
	Azure Repo	✅	✅	NO	
	Gitlab	✅	❌	NO	
	Generic Git Connector	✅	❌	NO	
	Git activity	✅	❌	NO	
Artifact Sources	Docker	✅	✅		
	Jenkins	✅	✅		
	Amazon S3	✅	✅		
	Artifactory	✅	✅		
	Nexus	✅	✅		
	ECR	✅	✅		
	Google Container Registry	✅	✅		
	Custom Artifact Source	✅	✅		
	Azure Artifacts	✅	🚧		
	Azure Container Registry	✅	✅		
	Azure VMSS	✅	🚧		
	Github Package Registry	❌	✅		
	Google Artifact Registry	❌	✅		
	GCS	✅	✅		
	Amazon AMI	✅	🚧		
	Bamboo	✅	❌		

| | SFTP | ✅ | ❌ | | |
| | SMB | ✅ | ❌ | | |