Survey Name:			**2022 CNCF Cloud Native Survey**		
Page	**Q#**	**R#**	**Questions and Responses**	**Show/Hide Rules and Logic**	**Survey Review/Coding Notes**
1			**Introduction**		
1			Since 2016, the Cloud Native Computing Foundation (CNCF) has conducted community-driven research. In partnership with Linux Foundation Research, this year's CNCF survey will take a quick, high-level view on containers, Kubernetes and other cloud-native adoption trends. Then, it will look at the tools, projects and challenges facing the users of these technologies. Your responses are anonymous and will be used to compile a report to be released later this year. Your name and/or organization name will not be displayed. Reviews are attributed to your role, organization size, and industry. Responses will be subject to the Linux Foundation's Privacy Policy, available at https://linuxfoundation.org/privacy. Please note that research partners who are not Linux Foundation employees will review the survey results. Survey partners are not permitted to use your data for other purposes.		
2			**Tell us about yourself**		
2	1		**What is your geographic location?** (select one)		
		1	Africa		
		2	Asia-Pacific (except China, India, and Japan)		
		3	China		
		4	Europe (including Russia)		
		5	India		
		6	Japan		
		7	Mexico, Central America, the Caribbean, or South America		
		8	United States or Canada		
2	2		**Please indicate what best describes who you are.** (select one)		
		1	I'm just lines of code	Disqualify	
		2	I am a real person		
		3	I am a bot	Disqualify	
		4	I just want to mess with the researchers	Disqualify	
		5	Don't know or not sure	Disqualify	
2	3		**How many years of technical experience do you have working in cloud-based environments?** (select one)		
		1	Less than 2 years		
		2	2-5 years		
		3	6-10 years		
		4	More than 10 years		
2	4		**Are you part of CNCF's End User Community?** End users use cloud native technologies internally and do not sell any cloud native services externally.		
		1	Yes		
		2	No		
		3	Don't know or not sure		
2	5		**How many employees does your organization have worldwide?** (select one)		
		1	10 or less		
		2	11-50		
		3	50-99		
		4	100-499		
		5	500-999		
		6	1,000-4,999		
		7	5,000-19,999		
		8	20,000 or more		
		9	I am not currently employed or affiliated with an organization	Disqualify	
		10	Don't know or not sure	Disqualify	
2	6		**What is your job function?** (check all that apply)		
		1	Software Architect		
		2	Mobile Developer		
		3	Back-End Developer		
		4	Front-End / Applications Developer		
		5	Full-Stack Developer		
		6	Security Engineer		
		7	Quality Assurance Engineer		
		8	SRE / DevOps Engineer		
		9	Engineering Manager		
		10	DevOps Management		

		11	Release Management		
		12	Product / Project Management		
		13	Machine Learning Specialist		
		14	Data Scientist		
		15	Database Administrator		
		16	Training / Certification		
		17	Developer Relations		
		18	Sales		
		19	Marketing		
		0	Other (please specify)		
2	**7**		**What title most accurately describes your role?** (select one)		
		1	Software Developer/Engineer		
		2	Systems Admin		
		3	Network Admin		
		4	Manager/Director/VP		
		5	Scientist/Researcher/Specialist		
		6	Assistant		
		7	Business Developer		
		8	Executive (CEO, CMO, CFO, COO, CTO, CIO)		
		9	Teacher/Student		
		10	Professional services/Consultant		
		0	Other (please specify)		
3			**Cloud computing and cloud native at your organization**		
3	text		Most of the remaining questions are meant for individuals that work within larger organizations. Therefore, you may not have the background or experience to answer the questions. Feel free to continue along with the survey to get an understanding of the types of technologies and challenges cloud native professionals face.	Hide if Q5.9	
3	8		**What industry does your organization belong to?** (select one)		
		1	Agriculture		
		2	Automotive		
		3	Business Services (accounting, management consulting, legal, etc.)		
		4	Consumer Packaged Goods		
		5	Construction/Engineering		
		6	Education (K-12/Primary/Secondary)		
		7	Education (College/University)		
		8	Financial Services (Banking/Insurance/Securities)		
		9	Government (Federal/National)		
		10	Government (State/Local)		
		11	Health Care		
		12	Hospitality		
		13	Information Technology (IT vendor, service provider, or manufacturer)		
		14	Life Sciences (biotech, pharmaceuticals, etc.)		
		15	Manufacturing (discrete or process)		
		16	Media (broadcast communications, entertainment, publishing, web site, social networking, etc.)		
		17	Oil & Gas		
		18	Retail, Wholesale, & eCommerce		
		19	Telecommunications / Internet Service Provider (ISP) / Web Hosting		
		20	Transportation & Logistics (other than Automotive)		
		21	Utilities/Energy (other than Oil & Gas)		
		0	Other (please specify)		
3	9		**To what extent has your organization adopted cloud native techniques?** (select one)		
		1	We have not started using cloud native computing techniques		
		2	We are just beginning to use cloud native computing techniques		
		3	Some of our development and deployment use cloud native techniques		
		4	Much of our development and deployment use cloud native techniques		
		5	Nearly all of our development and deployment use cloud native techniques		
		6	Don't know or not sure		
3	10		**Which of the following combinations of data center and cloud architectures does your organization use?** (check all that apply)		
		1	Private Cloud/On-Premise (one or more clouds)		
		2	Public Cloud (one or more more clouds)		
		3	Hybrid Cloud (at least one private and one public cloud that are somewhat integrated)		
		4	Other (please specify)		
		0	Don't know or not sure		
3	11		**How many unique cloud environments does your organization use? Please include in your response all data center and cloud architecture combinations that are operated by your cloud service providers or by internal staff.** (select one)		

		1	1		
		2	2		
		3	3		
		4	4		
		5	5		
		6	6-9		
		7	10 or more		
		8	Don't know or not sure		
3	12		**On average, how many machines are in your fleet (incl VM, bare metal, etc.)?** (select one)		
		1	1-5		
		2	6-20		
		3	21-50		
		4	51-100		
		5	101-200		
		6	201-500		
		7	501-1,000		
		8	1,001-2,000		
		9	2,001-5,000		
		10	More than 5,000		
		0	Not applicable or don't know		
3	13		How are containers used within your organization? (select one)		
		1	Used for most or all production applications and business segments throughout the organization		
		2	Used for a few production applications or business segments in the organization		
		3	Piloting or actively evaluating in test environments		
		4	Planning to use in the next year		
		5	No near-term plans to use	Hide Pages 4-7	
		6	Don't know or not sure	Hide Pages 4-7	
4			**Containers**		
4	14		**How many containers does your organization typically run at any one time?** (select one)	Hide if Q13.5 or Q13.6	
		1	1-49		
		2	50-249		
		3	250-999		
		4	1,000-4,999		
		5	5,000 or more		
		6	None		
		7	Don't know or not sure		
4	15		**What are your challenges in using / deploying containers?** (check all that apply)		
		1	CI/CD		
		2	Complexity		
		3	Lack of training		
		4	Difficulty in choosing an orchestration solution		
		5	Finding vendor support		
		6	Logging		
		7	Monitoring		
		8	Networking		
		9	Reliability		
		10	Scaling deployments based upon the load		
		11	Security		
		12	Storage		
		13	Service Mesh		
		14	Testing		
		15	Cultural changes w/development team		
		16	Other (please specify)		
			Kubernetes		
5	16		**Does your organization use Kubernetes?** (select one)		
		1	Yes, using in production	Show all of Page 6 (don't need to program that though)	
		2	Yes, piloting or actively evaluating in test environments	Hide Q18	
		3	No	Hide Page 6	
		4	Don't know or not sure	Hide Page 6	
5	17		**How many container orchestration tools that are not associated with Kubernetes is your organization currently using in production and actively evaluating/piloting?** (select one in each row) [0, 1, 2, 3, 4 or more, Don't know or not sure]		
		1	Using in production		
		2	Piloting or actively evaluating in test environments		

6			**Kubernetes Follow-up**	Hide if Q16.3 or 16.4	
6	18		**If your organization uses Kubernetes, how many production clusters do you have?** (select one)	Hide if Q16.2	
		1	1		
		2	2-5		
		3	6-10		
		4	11-20		
		5	21-50		
		6	More than 50		
		7	Don't know or not sure		
6	19		**If you use Kubernetes, how do you separate your applications?** (check all that apply)		
		1	Namespaces		
		2	Only labels		
		3	Separate clusters		
		4 Text	Other (please specify)		
		0	Not applicable to me		
6	20		**What is your preferred method for packaging Kubernetes applications?** (select one)		
		1	Helm		
		2	Kustomize		
		3	Managed Kubernetes offering		
		4	Buildpacks		
		5	Porter		
		6	CNAB		
		7	Other (please specify)		
6	21		**Which Kubernetes workloads do you currently or plan to autoscale?** (check all that apply)		
		1	Stateless applications – no state or data stored outside of a given deployment		
		2	Task/Queue processing		
		3	Stateful applications		
		4	Databases		
		5	Recurring batch jobs		
		6	Other (please specify)		
		0	Not applicable - I do not want to autoscale any workloads at this time	Hide Page 7	
7			**Autoscaling Follow-up**	Hide if Q21.0	
7	22		**If you are NOT using Kubernetes autoscaling capabilities, why not?** (check all that apply)	Hide if Q21.0	
		1	I have built my own solution to autoscale		
		2	I am using a 3rd party autoscaling solution		
		3	I was not aware of them		
		4	I would like to use them but they do not work the way I need them to		
		5	I tried to use them but they were too hard to use		
		6	Other (please specify)		
8			**Projects**		
8	**23**		**Please indicate whether your organization is using in production or evaluating the following graduated CNCF projects.** (select one per row) [Using in production, Evaluating, Not using, Don't know or not sure]		
		1	containerd		
		2	CoreDNS		
		3	Envoy		
		4	etcd		
		5	Fluentd		
		6	Harbor		
		7	Helm		
		8	Jaeger		
		9	Kubernetes		
		10	Linkerd		
		11	Open Policy Agent (OPA)		
		12	Prometheus		
		13	Rook		
		14	The Update Framework (TUF)		
		15	TiKV		
		16	Vitess		
8	**24**		**Please indicate if your company/organization is evaluating, or currently using in production, any of these incubating CNCF projects.** (select one per row) [Using in production, Evaluating, Not using, Don't know or not sure]		
		1	Argo		
		2	Backstage		
		3	Buildpacks		

		4	Chaos Mesh		
		5	Cilium		
		6	CloudEvents		
		7	Container Network Interface (CNI)		
		8	Contour		
		9	Cortex		
		10	CRI-O		
		11	Crossplane		
		12	CubeFS		
		13	Dapr		
		14	Dragonfly		
		15	Emissary-Ingress		
		16	Falco		
		17	Flux		
		18	gRPC		
		19	in-toto		
		20	Keda		
		21	Keptn		
		22	Knative		
		23	KubeEdge		
		24	KubeVirt		
		25	Litmus		
		26	Longhorn		
		27	NATS		
		28	Notary		
		29	OpenMetrics		
		30	OpenTelemetry		
		31	Operator Framework		
		32	SPIFFE		
		33	SPIRE		
		34	Thanos		
		35	Volcano		
9			**Projects - Follow-up**		
9	25		**What practical, technical, or cultural, challenges have you experienced or do you foresee when using the CNCF projects that are being used in production?** (check all that apply)		
		1	Code bugs		
		2	Concerned that open source projects could become inactive		
		3	Difficult to install		
		4	Doesn't work well with my existing deployment tools or infrastructure		
		5	Lack of supporting documentation		
		6	Management doesn't see value of open source		
		7	Security vulnerabilities		
		8	Too complex to understand or run		
		9	I have not experienced any challenges		
		0	Other (please specify)		
10			**Security and Compliance**		
10	**26**		**What is the status of the following security and compliance related activities in your IT organization?** (select one per row) [Columns: Fully implemented; Beginning to implement; Planning to implement; No plans to implement; Don't know or not sure]		
		1	**Security policy for software development that addresses open source software**		
		2	**Codified policies that can be managed via Git and/or DevOps processes**		
		3	**Codified policies that can be dynamically associated with identities**		
		4	**Consuming SBOM (Software Bill of Materials) content to identify compliance or security issues**		
		5	**OSPO (Open Source Program Office)**		
11			**Monitoring, Logging and Observability**		
11	27		**How do you run your observability tools?** (check all that apply)		
		1	Self-managed on public cloud		
		2	As-a-service on public cloud		
		3	Self-managed on-prem		
		4	Self-managed in private cloud		
		5	As-a-service on-premises		
		6	As-a-service on private cloud		
		0	Don't know or not sure		
11	**28**		**For your monitoring & logging solutions, do you require the system to:** (select one) [Run on-prem within your infrastructure, Run hosted via a remote service, None: I do not use this service]		
		1	Monitoring		
		2	Logging		
		3	Tracing		

12			**WebAssembly**		
12	29		**Have you or your organization ever deployed an application using WebAssembly?** (select one)		
		1	Yes, I have personally used WebAssembly to deploy an application		
		2	Yes, my organization has used WebAssembly to deploy an application		
		3	Both myself and my organization have used WebAssembly to deploy an application		
		4	No		
		5	Don't know or not sure		
12	30		**Have you used or are aware of the following WebAssembly runtimes?** (select one per row) [Yes, using or have used; Yes, aware of the runtime; No, not aware]		
		1	WasmEdge		
		2	Wasmtime		
		3	Wasmer		
		4	WebAssembly Micro Runtime (WAMR)		
		5	Wasm3		
12	31		**In each of the following areas, how much of an impact do you think WebAssembly will have in the next five years?** (select one per row) (Minimum impact; Some impact; Very high impact; Don't know or not sure)		
		1	Artificial Intelligence		
		2	Audio / Video Processing		
		3	Blockchain		
		4	Containerization		
		5	Cryptography		
		6	Game Development		
		7	Internet of Things		
		8	Scientific		
		9	Serverless		
		10	Web development		
13			**Technology Roadmap**		
13	**32**		**How does your organization use a service proxy?** (select one)		
		1	Used in production for most or all applications and business segments throughout the organization		
		2	Used in production for a few applications or business segments in the organization		
		3	Piloting or actively evaluating in test environments		
		4	Planning to use in the next year		
		5	No near-term plans to use		
		6	Don't know or not sure		
	33		**Is your organization using a service mesh?** (select one)		
		1	Yes, used in production for most or all applications and business segments throughout the organization		
		2	Yes, used in production for a few applications or business segments in the organization		
		3	Piloting or actively evaluating in test environments		
		4	Planning to use in the next year		
		5	No near-term plans to use		
		6	Don't know or not sure		
13	34		**Does your organization run stateful applications in containers?** (select one)		
		1	Yes, used in production for most or all applications and business segments throughout the organization		
		2	Yes, used in a few production applications or business segments in the organization		
		3	Piloting or actively evaluating in test environments		
		4	Planning to use in the next year		
		5	No near-term plans to use		
		6	Don't know or not sure		
13	35		**Does your organization use serverless architecture and/or functions as a service solutions?** (select one)		
		1	Yes, used in production for most or all productions applications and business segments throughout the organization		
		2	Yes, used for a few production applications or business segments in the organization		
		3	Piloting or actively evaluating in test environments		
		4	Planning to use in the next year		
		5	No near-term plans to use		
		6	Don't know or not sure		
15			**Code, Release Cycles and Automation**		
	38		**How often do you check in code?** (select one)		
		1	Multiple times a day		
		2	Daily		
		3	Between once a day and once a month		
		4	Less than once a month		
		0	Not applicable or don't know		

15	39		**How often are your organization's release cycles?** (select one)		
		1	Multiple times a day		
		2	Daily		
		3	Weekly		
		4	Monthly		
		5	Quarterly		
		6	Ad Hoc		
		0	Not applicable or don't know		
15	40		**What percentage of your organization's releases are automated?** (select one)		
		1	0%		
		2	1-20%		
		3	21-40%		
		4	41-60%		
		5	61-80%		
		6	81-100%		
		0	Not applicable or don't know		
15	41		**To what extent has your organization adopted practices and tools that adhere to GitOps principles?** (select one)		
		1	We have not started using practices and tools that adhere to GitOps principles		
		2	We are just beginning to use practices and tools that adhere to GitOps principles		
		3	Some of our deployment practices and tools adhere to GitOps principles		
		4	Much of our deployment practices and tools adhere to GitOps principles		
		5	Nearly all of our deployment practices and tools adhere to GitOps principles		
		6	Don't know or not sure		
15	**42**		**How does your organization use Continuous Integration / Continuous Development tools to manage (CI/CD) pipelines?** (select one)		
			Used in production for most or all productions applications and business segments throughout the organization		this option was mistakenly excluded from the survey
		1	Used for a few production applications or business segments in the organization		
		2	Piloting or actively evaluating in test environments		
		3	Planning to use in the next year	Hide Page 16	
		4	No near-term plans to use	Hide Page 16	
		5	Don't know or not sure	Hide Page 16	
16			**Tools for Managing CI/CD Pipelines**		
16	**43**		**What tools does your organization currently use to manage its CI/CD pipeline?** (check all that apply)	Hidden if not using tools to manage CI/CD pipelines	
		1	Akuity		
		2	Argo		
		3	AWS CodePipeline		
		4	Azure Pipelines		
		5	Bamboo		
		6	Brigade		
		7	Buildkite		
		8	Bunnyshell		
		9	Cartographer		
		10	CircleCI		
		11	Cloudbees Codeship		
		12	Codefresh		
		13	Concourse		
		14	D2iQ Dispatch		
		15	DolphinScheduler		
		16	Drone		
		17	Flagger		
		18	Flux		
		19	GitHub Actions		
		20	GitLab		
		21	Google Cloud Build		
		22	Harness.io		
		23	Jenkins		
		24	JenkinsX		
		25	Keptn		
		26	Octopus Deploy		
		27	OpenGitOps		
		28	OpenKruise		
		29	Ortelius		
		30	Spacelift		
		31	Spinnaker		
		32	TeamCity		
		33	Tekton Pipelines		
		34	Travis CI		
		35	Woodpecker CI		
		36	XL Deploy		

		37 Text	Other (please specify)		
17			**The survey is almost over - just two more optional questions.**		
17	44		**How can we make this survey better - or what should we have asked you that we didn't?**		
		Text			
17	45		**If you're interested in discussing cloud native further, want to know more, or are interested in potentially partnering with CNCF, please provide your name and email address so we can connect with you.**		
		text	Name		
		text	Email Address		
17		text	**Thank you for completing the survey! Code SOSE2022 is good through August 31 for 25% off any Linux Foundation training and certification purchase from the complete catalog (https://training.linuxfoundation.org/full-catalog/).**		
			End of Survey		