Building a Cloud Center of Excellence

Google Cloud

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Ensuring success in the cloud

The rush to the cloud is accelerating, as the benefits of a move to the cloud increase. To make that transition smooth and successful, however, your organization will need to do some careful preparation. You'll want to align your cloud strategy with your larger organizational strategy and to consider also how your business will transform as a result of this technological change.

And you'll need solid and widespread advocacy from within the organization. Without such advocacy, all responsibility for generating enthusiasm and momentum for cloud adoption rests with the executive sponsors. This top-down approach can be slow to scale, but also fails to embrace the inherent democratization of IT resources that cloud computing offers.

One way of generating such advocacy is to bring together a group of people from within the organization to provide leadership, best practices, research, support, and training for the move to the cloud. With a team like this, it becomes easier to foster engagement and momentum organically, and also to create the infrastructure and the frameworks necessary to become a cloud-first business. As the strongest advocates for cloud adoption within the organization, the team helps to ignite enthusiasm. They can also serve as a catalyst for innovation. They will find new ways to achieve the desired goals — and deeply attuned to the business strategy as they are, the initiatives and pilot projects that this group develops are more likely to evolve into endeavors that position the organization for long-term success.

Foster engagement and momentum organically, and create the infrastructure and frameworks to become a cloud-first business

The Cloud Center of Excellence

Building an internal team to drive success is a natural inclination. At Google, we've seen this team called many different things. Cloud Services, Innovation Council, Cloud Engineering, even Cloud Platform. We refer to a team so organized and directed as a Cloud Center of Excellence, or a Cloud COE.

A well-appointed Cloud COE begins with a small team who understands the Google Cloud Adoption Framework and is able to use it as a guide for implementing cloud technology aligned with a business's goals and strategy. The Cloud COE team then becomes the conduit for transforming the way that the other internal teams serve the business in the transition to the cloud.

The Cloud COE team accelerates cloud adoption by:

• Driving momentum across the organization

• Developing reusable frameworks for cloud governance

• Managing cloud knowledge and learning

• Overseeing cloud usage and plans for scale

• Aligning cloud offerings to the larger organizational strategy

A Cloud COE is not a static entity. Rather, it continually evolves to keep pace with the innovation associated with adopting the cloud. Executive leadership should design the Cloud COE as an adaptive structure that evolves as the needs of the organization do.

The Google Cloud Adoption Framework

A successful Cloud COE is guided by the Google Cloud Adoption Framework, which builds a structure on the rubric of people, process, and technology that produces actionable programs within the themes of Learn, Lead, Scale, and Secure. This framework is informed by Google's own evolution in the cloud and many years of experience helping customers.

The Cloud COE is the team that drives the cloud maturity of the organization forward and sets the agenda of the activities articulated in the Google Cloud Adoption Framework
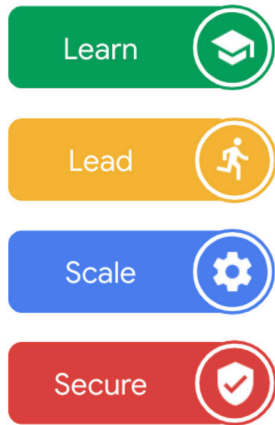
A deeper dive into the Cloud Center of Excellence

Running a Cloud COE is a full-time job in a large organization. Its team members are aligned with the business strategy. They collaborate with the rest of the organization in achieving their goals. And they are fully committed to the success of this move to the cloud.
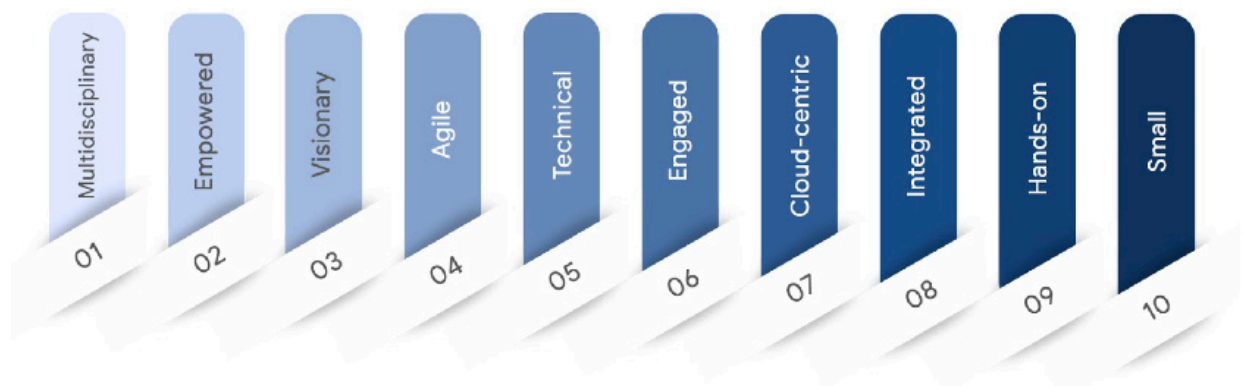
The team that makes up the Cloud COE must also be cross-functional. As they will have the authority to make decisions regarding architecture and process, they will need expertise in all things cloud.

The characteristics and focus of a Cloud COE

Central to the Cloud COE's role is setting the foundation for a successful cloud migration and encouraging a culture of collaboration and knowledge sharing. Cloud COE team members advise on and implement solutions, providing both thought leadership and hands-on support. In practical terms, a Cloud COE can be established based on practices, workstreams, processes, tools, or other significant structuring factors.

As it is the needs, the priorities, and the capabilities of the business that drive the structure and scope of the Cloud COE, each Cloud COE will look a little different. And the current state of cloud maturity of the team will drive its orientation and activities.

Across organizations, however, there are several characteristics that successful Cloud COEs will have in common:

Multidisciplinary	Empowered	Visionary	Agile	Technical	Engaged	Cloud-centric	Integrated	Hands-on	Small
01	02	03	04	05	06	07	08	09	10

The most successful Cloud COE teams are:

- **Multidisciplinary**: Members of the team reflect the diverse perspectives of the stakeholders in the project.

- **Empowered:** The Cloud COE should have decision-making power without need for higher-level sign-off.

- **Visionary:** The Cloud COE should consider a multi-project viewpoint to understand repeatability and long-term benefits or goals for the organization.

- **Agile:** The Cloud COE should understand the necessary requirements to be able to deliver short-term wins such as short development cycles and an iterative approach to building products.

- **Technical:** The Cloud COE should include experienced individuals with a history of architecting and building past solutions within the organization.

- **Engaged:** The individuals within the Cloud COE should be dedicated, able to commit full-time to the endeavor and the process.

- **Cloud-centric:** The Cloud COE should include members who will specialize in the cloud and cloud-specific functions.

- **Integrated:** The individuals within the Cloud COE should be sourced from existing areas of the business to allow for easy integration into existing teams and organizational constructs.

- **Hands-on:** Within a Cloud COE, there should be individuals who are able to do the hands-on work needed to build and test cloud solutions.

- **Small:** The Cloud COE should start as small as possible, ideally 10 team members or fewer, while still incorporating the knowledge and expertise to accomplish the other characteristics.

Both the cloud maturity level of the organization and its business strategy determine the focus of the Cloud COE. Some Cloud COEs focus on best practices; others focus on standardization, improvements, or innovation. In terms of cloud maturity level, a focus on driving transformational cloud maturity for an organization would mean:

- Inspiring engineers to work on cloud technologies, including training and enablement

- Leveraging agile techniques and a fail-fast approach to research services that fit the model appropriate to the organization and existing data center platforms

- Collecting the data that will determine the patterns of future success

Which focus to adopt depends on the most pressing needs and goals of the organization. Those needs and goals are defined by the executive team, and the Cloud COE streamlines its services based on them.
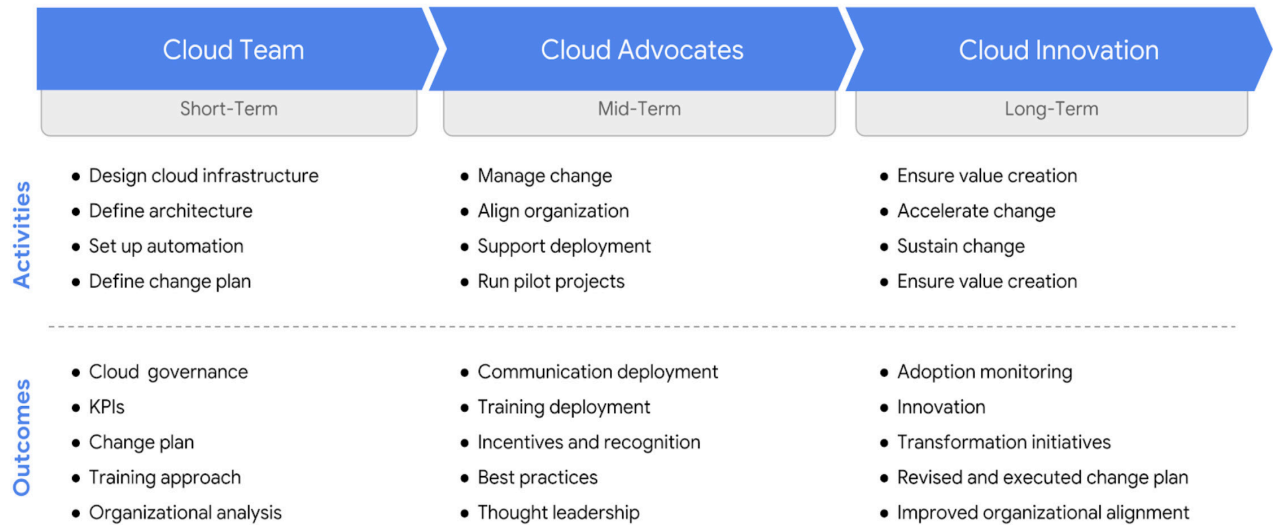
The Cloud COE is designed to meet the needs of individual organizations. No two Cloud Centers of Excellence will look quite the same.

The evolution of the Cloud COE

Individual Cloud COEs differ across organizations, and they also differ across time. The organizational knowledge and capabilities that the Cloud COE reflects will evolve over time, as will the cloud maturity level of the organization. The Cloud COE must evolve with it.

As the Cloud COE evolves, it will increasingly be populated with engineers who have experience and a deep understanding of how critical functions currently operate. They will know how to translate existing data center–based platforms into cloud-based platforms, and how to host greenfield applications on the cloud platform using cloud-native services.

A high-level view of the evolution and alignment of a Cloud COE captures the activities and outcomes in terms of timeframe:

Cloud Team	Cloud Advocates	Cloud Innovation
Short-Term	Mid-Term	Long-Term

Activities

• Design cloud infrastructure	• Manage change	• Ensure value creation
• Define architecture	• Align organization	• Accelerate change
• Set up automation	• Support deployment	• Sustain change
• Define change plan	• Run pilot projects	• Ensure value creation

Outcomes

• Cloud governance	• Communication deployment	• Adoption monitoring
• KPIs	• Training deployment	• Innovation
• Change plan	• Incentives and recognition	• Transformation initiatives
• Training approach	• Best practices	• Revised and executed change plan
• Organizational analysis	• Thought leadership	• Improved organizational alignment

The Cloud COE and measurement

A successful cloud migration is determined by how well an organization adopts the cloud relative to their desired goals.

The Cloud Adoption Framework anchors the concept of cloud maturity in four themes (Learn, Lead, Scale, Secure) and the corresponding workstreams (or epics) required to determine successful cloud adoption. To define their goals for cloud adoption, the executive team should agree both on the current cloud maturity level for the organization and on which level they'd like to take it to.

With cloud maturity goals defined, success metrics can then be developed. These metrics should align both to the larger business strategy and to the cloud maturity goals, defining desired outcomes in terms of tangible, measurable results.

The role of the Cloud COE is to drive progress towards these tangible and measurable results. Tracking key performance indicators (KPIs) allows the executive team and Cloud COE members to align communications, training, and practices to help employees internalize the change and incorporate the cloud into their work.

Measuring and analyzing the right KPIs is critical for understanding the value delivered by the cloud both to individuals and to the organization. This, in turn, allows for more rapid cloud maturity, as measurable success drives user buy-in and senior sponsorship, as well as identifying key areas for focus and improvement.

Your metrics for success should align both to your larger business strategy and to your cloud maturity goals

The most significant measure of success

A Cloud COE is successful to the extent that it successfully drives cloud adoption.

If employees feel that the Cloud COE is collaborative and that it helps facilitate cloud deployment and usage, they will be more likely to use its services to work together in building better technology, processes, and culture. If they feel coerced or that the Cloud COE has its own separate agenda, they are less likely to embrace the COE or work with it.

The Cloud COE must strive always to inspire, to guide, and to support. It is an enabler of success and exists to help the overall organization achieve its goals. The Cloud COE is only successful if the various teams and organizations it supports are successful on their cloud journeys.

Building a Cloud Center of Excellence

The best timing for building your Cloud COE is well before undertaking the first cloud migration. However, there is never a bad time to introduce best practices and cloud governance. Setting up a Cloud COE midway through your cloud journey still offers many opportunities to realize benefits and better alignment with your strategic goals for cloud adoption.

Once the Cloud COE members are selected and the Cloud COE is evangelized across the organization, it is important to quickly create momentum and begin the work to set the foundation for the cloud.

Strong executive sponsorship

A successful Cloud COE empowers transformation. For a Cloud COE to be successful, it must itself be empowered, endorsed, and supported by strong executive sponsors. Comprehensive buy-in should expand across the C-suite and must reach across business functions, not just the Information and Technology (IT) function. Strong executive sponsors are actively involved in cloud deployments. They champion Cloud COE practices across the organization. And they support the Cloud COE through its evolution.

Strong executive sponsors in the form of an executive committee will:

- Co-develop objectives with the Cloud COE to make sure that activities align with the business strategy, and communicate this to the wider business and projects team(s)

- Create a communication channel for the Cloud COE for the purpose of quickly raising issues and risks with the committee

- Announce and promote the Cloud COE communication channel(s) within the business

- Agree on the engagement model for the committee with the Cloud COE and between Cloud COE and businesses/functions

- Secure funding for the resources to staff the Cloud COE and for all the initiatives led by the COE

Organizational analysis

Any cloud implementation strategy should be grounded in an organizational analysis. Included in the analysis are documenting the organization's cloud vision and establishing measurable goals. The cloud vision maps business objectives and needs to technology capabilities. It provides the sponsor with a key tool for selling the benefits of moving to the cloud to stakeholders and decision makers within the enterprise. The vision is critical to establishing a realistic adoption strategy. It provides the business context for making cloud computing transformational for your business.

You might kick off an organizational analysis with a workshop to discuss the cloud adoption journey and to make the key decisions required. Include stakeholders with both technical and business points of view. You will need both perspectives in the discussion. The core question to be answered is, "What will adopting the cloud do for us as a company? What outcome are we looking for?" To get at that central issue, the conversation may explore questions such as these:

- Why are we investing in the cloud?

- How is technology used in our enterprise?

- How can the cloud address business challenges through three distinct lenses: technology, economics, and security?

- Will we be striving for innovation? To be the best in our industry?

As part of the discussion, you will need to evaluate the maturity of your organization's cloud capabilities. Determining that maturity level, in turn, enables you to define measurable goals for successful cloud adoption.

Determining your maturity level enables you to define measurable goals for successful cloud adoption

The Google Cloud Adoption Framework provides a Cloud Maturity Assessment to assist you with both these tasks. Completing a Cloud Maturity Assessment then enables you to turn to questions such as these:

- What is the critical path for achieving a successful cloud adoption?

- How can the organization's culture be aligned with the technological changes?

- What policies and procedures will be impacted as part of the cloud adoption journey?

- What potential challenges can impact the training and communication required to drive cloud adoption within the organization?

With capabilities and goals defined, you can then consider how best to shape your Cloud COE, with questions such as these:

- Which projects can become a part of the Cloud COE as either a pilot or a proof of concept?

- Who would be the stakeholders and/or owners for the identified workstreams?

- Who can become a part of the early cloud adoption program, while driving an effective feedback channel to the Cloud COE?

Team member activities

The Cloud COE is a cross-functional team of people with deep skills and expertise. At a high level, the team undertakes to shape and support the direction of the company across five domains:

Adoption	Promoting the adoption of cloud products across the organization
Governance	Developing frameworks and advising on cloud methodology
Knowledge	Administering and coordinating cloud learnings and best practices
Operations	Managing cloud usage and planning for scale
Strategy	Aligning cloud offerings with the organization's overall business strategy

A range of activities underpins those efforts:

Cloud COE activities	
Activities	**Tasks**
Adoption	**Accelerate cloud adoption** • Increase cloud product/feature use • Unlock cloud capabilities • Implement a well-designed cloud architecture • Advocate for cloud adoption by sharing success stories • Develop reusable tools and artifacts **Encourage collaboration** • Create and promote communication channels • Minimize collaboration barriers across functions • Define and monitor cross-functional collaboration activities **Increase awareness** • Give employees access to information • Delegate authority and empower employees to take decisions • Encourage open communication throughout the organization
Governance	**Cloud advisory** • Advise on cloud methodology • Advise on release management **Cloud optimization** • Oversee cloud utilization and address under- and overutilization • Improve data usage and management • Standardize processes and methodologies • Incorporate agile methodology in cloud releases **Define cloud roadmap(s)** • Define future cloud products and features • Align future cloud usage to the business roadmap • Prepare for scale and optimization

Governance	**Governance** • Tailor cloud architecture to business needs • Develop management governance for the design, build, and release phases • Build cloud architecture frameworks • Design cloud processes • Develop development guidelines **Retooling** • Standardize tools across functions • Create tools to be used in cloud initiatives
Knowledge	**Best practices** • Work with different functions to capture best practices • Disseminate best practices across teams • Continuously capture and propagate best practices • Adjust processes based on best practices **Internal expertise** • Create technical excellence within the organization • Advise on the recruiting, training, and upskilling of cloud employees **Knowledge management** • Serve as a centralized point of knowledge management • Capture and encourage best practices • Become the centralized point for questions about the cloud • Support the development of the training approach **Learning culture** • Encourage continuous learning • Develop a culture of excellence and knowledge **Thought leadership** • Develop practices that are specific to the organization • Develop points of view on the cloud and the organization • Manage asset creation and publication

Operations	**Cloud management** • Monitor cloud usage • Manage cloud permissions **Cost optimization** • Monitor costs • Manage billing **Metrics and KPIs** • Identify metrics • Capture and update metrics • Report metrics to executive team and organization **Onboarding** • Onboard new members to the Cloud COE **Security** • Incorporate security protocols into the cloud architecture • Manage access and identity • Manage cloud permissions
Strategy	**Growth** • Prioritize projects and initiatives • Deploy the cloud strategy • Modernize infrastructure technology • Accelerate go-to-market products **Innovation** • Use the cloud to develop new use cases • Spearhead technological innovations **Integration** • Align the cloud strategy to the larger organizational strategy • Promote cross-functional integration **Program management** • Plan sprints, releases, and upgrades • Monitor access and identity **Strategic alignment** • Ensure business alignment • Communicate with the executive team often to adapt a cloud strategy for potential organizational strategy changes

Team member roles

The roles in a Cloud COE will vary based on the organization's maturity in the cloud and its specific needs. Small organizations might have a number of people sharing particular roles (for example, security and networking), but large organizations are likely to separate roles out by individuals. The intent is to create a team with the ability to move at the pace necessary to achieve the organization's strategic goals.

The following roles are typical of well-staffed Cloud COEs:

Cloud COE roles	
Cloud COE Lead	Oversees the Cloud COE. Responsible for working with the executive team on cross-team collaboration, next steps, sponsorship, and overall management of the Cloud COE.
Developer Operations and Infrastructure Lead	Responsible for the team's project management and execution. In addition, aligns developers to best practices and essential standards. Consults on edge cases and unique needs. Builds the applications and tools needed for app deployment and management.
Software Engineer/ Cloud Architect	Specializes in working on cloud computing systems. Develops the next-generation products and applications on cloud technologies. Helps determine how the system should operate and provides guidance to the programmers who help write the application code, aligning developers to best practices and essential standards. May design new systems or upgrade existing systems. Consults with the business team on how to design cloud applications for optimal scaling. Represents the enterprise's APIs to Cloud COE consumers and partners through evangelism, onboarding, documentation, and support. Additionally, has a creative and technical mindset that empowers the organization to use the cloud, likely using a "Train the Trainer" approach to train counterparts and achieve scale. Keeps up to speed and promotes the latest trainings and certifications, and designs and maintains customized programs

Site Reliability Engineer	Ensures that services — both internally critical and externally visible systems — have reliability and uptime appropriate to users' needs and a fast rate of improvement, while keeping an eye on capacity and performance. Responsible for availability, latency, performance, efficiency, change management, monitoring, emergency response, and capacity planning. Focuses on the health of the Google Cloud Platform (GCP) infrastructure. Site Reliability Engineering (SRE) is a discipline that combines software and systems engineering to build and run large-scale, massively distributed, fault-tolerant systems. SRE is also a mindset and a set of engineering approaches to running better production systems.
Cloud Engineering Lead	Responsible for the team's project management and execution. Oversees the cloud architecture, network engineering, security, and software engineers, cloud engineers, and developers in the team.
Network Engineer	Responsible for external-facing network infrastructure (public-facing IPs, firewalls, cloud DNS, cloud interconnect, NAT/egress control), including connectivity to provide private networking to other infrastructure. Helps to develop and ensure that the design and feature enhancements keep systems running smoothly. Also ensures that network operations are safe and efficient by monitoring network performance, coordinating planned maintenance, adjusting hardware components, and responding to network connectivity issues. The network engineering team is responsible for operating the cloud network reliably and at scale.
Security Engineer	Responsible for the security of applications and infrastructure in the cloud. Helps to ensure that software and services are designed and implemented to the highest security standards. Performs security audits, risk analysis, application-level vulnerability testing, and security code reviews for a wide variety of products. Works closely with other software engineers to enhance the overall security posture.
Cloud Developer Operations and Infrastructure Engineer	Guides the process of configuring and deploying the cloud infrastructure, consisting of identity and access management, network architecture, application security, logging, monitoring, billing, and more. Consults with various teams across the organization on how to design their cloud applications for optimal scaling, including CDN design, load balancer setup, caching, compute optimizations, continuous integration and delivery pipeline, and more. Additionally, works closely with Product Management and Product Engineering to build and drive excellence across products.

Technical Solutions Engineer	Works closely with engineering, site reliability, and deployment teams to improve the critical tools and support process that enable cloud support engineers and internal customers to achieve success. Applies in-depth technical experience to develop a deep understanding of, and drive enhancements for, cloud tooling architecture.
	Builds and implements a global service and tooling platform to ensure stability, reusability, testing, compliance, and overall reliability. Acts as the first line of defense, in regular contact with cloud site reliability engineers, network engineers, and security engineers.
Data Scientist Lead	Leads the team of data scientists. Responsible for the team's project management and execution. Oversees data analytics and machine learning initiatives within an organization. Enables data-driven decision-making by collecting, transforming, and visualizing data. Designs, builds, maintains, and troubleshoots data processing systems with a particular emphasis on the security, reliability, fault-tolerance, scalability, fidelity, and efficiency of such systems.
	Additionally, analyzes data to gain insight into business outcomes, builds statistical models to support decision-making, and creates machine learning models to automate and simplify key business processes.
Data Scientist	Evaluates and improves the organization's products. Collaborates with a multi-disciplinary team of engineers and analysts on a wide range of problems. Brings scientific rigor and statistical methods to the challenges of creating, developing, and improving products with an appreciation for the behaviors of the end user.
	Works with engineers to analyze data and plan/design experiments, develops metrics and methodologies to support strategic decisions, builds statistical models, integrates new methodologies into existing systems, and communicates findings to engineers and others, both verbally and in writing.
Data Analyst	Supports initiatives related to systems, processes, and data transformation. Dives deeply into the data and understands the business processes supported, applying statistics and data modeling to gain actionable business insights and drive recommendations. Interacts with multiple stakeholders across business, product, and engineering teams, while working closely with the data team to support reporting and business metrics.
	Responsible for maintaining the data assets developed for underlying CRM ecosystem (such as business glossary, CDE/Reference data, and DQ dashboards) and managing the governance process for data model changes.
Organization Change and Communication Specialist	Assesses the impacts of cloud adoption on the organization as a whole, as well as on individual teams and lines of business. Helps align change initiatives with business value and strategic cloud goals. Develops and leads strategies to communicate key initiatives and successes across the enterprise.

Team member skills

It is important that the skills of the Cloud COE team members be robust enough to support their roles and activities. The following skills are recommended for Cloud COE team members:

Cloud COE skill sets		
Skills	**Activities and tasks**	**Roles**
Project Management	**Strategy and adoption** • Develop repeatable assets • Create deployment checklists and scope exercises for sprints • Define scope and resources requirements for workstreams	• Cloud COE Lead • Cloud Engineering Lead • Data Scientist Lead • Developer Operations and Infrastructure Lead
Cloud Deployment	**Operations, knowledge, and governance** • Define a cloud migration checklist relevant to the organization • Establish governance frameworks • Understand cloud deployment best practices and CI/CD tooling	• Software Engineer/Cloud Architect • Network Engineer • Security Engineer • Cloud Engineer • Data Scientist • Data Analyst
Change Management and Support	**Operations and governance** • Communicate with both operations and development communities • Train and develop others • Manage change and communication activities within the organization • Influence support processes and requirements within the organization • Articulate DevOps or Site Reliability Engineering methodologies • Build the expertise in the cloud to be subject matter experts • Influence project teams to support their applications • Direct the success criteria of proof of concept workloads and use cases	• Site Reliability Engineer • Developer Operations and Infrastructure Engineer • Technical Solutions Engineer • Organization Change and Communications Specialist

Team member training

To provide the Cloud COE individuals with the knowledge, resources, and tools to succeed in their role, it is important to equip them with the right training. A needs analysis will help define the training plan, which captures information on which individuals will receive training, the format and course those individuals will receive, and the targeted timeframe for training.

For GCP customers, Google Cloud Fundamentals is recommended to give the team the basic knowledge of Google Cloud Platform. If team members are new to agile delivery, they should also be trained in scrum and agile fundamentals.

To fill the key roles, the following learning paths are recommended:

Learning paths for key roles		
Track	**Description**	**Job roles**
Cloud Infrastructure	This track is designed to designed for IT professionals who are responsible for implementing, deploying, migrating, and maintaining applications in the cloud. Individual classes within the track are designed for differing roles and interests.	• Cloud COE Lead • Cloud Engineering Lead • Developer Operations and Infrastructure Lead • Software Engineer/Cloud Engineer • Cloud Architect • Network Engineer • Security Engineer
Data & Machine Learning	This track is designed for data professionals who are responsible for designing, building, analyzing, and optimizing big data solutions. Individual classes within the track are designed for differing roles and interests.	• Data Scientist Lead • Data Scientist • Data Analyst
Application Development	This track is designed for application programmers and software engineers who develop software programs in the cloud. Individual classes within the track are designed for differing roles and interests.	• Site Reliability Engineer • Developer Operations and Infrastructure Engineer • Technical Solutions Engineer

It is worth considering the Google Cloud Certifications, as these certifications cover the design, development, management, and administration of application infrastructure and data solutions on Google Cloud technology. The Google Cloud Certified designation demonstrates mastery of the job roles and skills recommended for the Cloud COE.

Staffing the Cloud COE

Plan to staff your Cloud COE with a technically capable and highly engaged team. Ideally, you'll be able to staff internally, so that team members are aligned with the corporate culture and come to the role with their corporate networks already in place. To buttress the team with additional skills not available internally, some organizations turn to external partners or consultants.

It can be tempting to think of turning the team that delivers the first cloud project into the Cloud COE. This repurposing works only if the project team is highly experienced in cloud offerings and if they can be committed to the responsibilities required for the Cloud COE on a full-time basis.

Engaging with the organization

Cloud COE members are the cloud champions within an organization. Their work should excite and inspire other employees about the benefits of moving to the cloud. For better leverage, the Cloud COE should be placed high enough within the organizational structure that the team will be able to create the momentum necessary for conducting a successful migration.

To engage deeply with other teams and individuals across the organization, the Cloud COE team members and the executive sponsors must work together to:

• Create a sense of urgency to help motivate employees to embrace the role of the Cloud COE in adopting the cloud

• Communicate the vision, purpose, and operating guidelines of the group

• Involve other employees in Cloud COE initiatives and in the cloud migration

• Encourage cross-functional collaboration so that employees will feel both empowered and represented

It is important for sponsors and Cloud COE team members to understand both why these goals are important and how to achieve them:

Cloud COE engagement goals		
Goal	Why it's important	How to achieve it
Creating a sense of urgency	Change can be overwhelming for employees, which can lead to delays in adoption. To help counter this, the executive sponsors will need to communicate the pressing nature of the change and discuss the road forward.	• Providing a vision for the future and the necessary road to get there • Highlighting market trends and competitor cloud usage • Sharing financial information to show potential gains from cloud adoption • Organizing town halls or forums where employees can raise questions
Communicating effectively	Effective transformation is built on strong communication. By communicating the Cloud COE's purpose, the executive team is able to build credibility, collaboration, and engagement. Employees should understand the vision and benefits of the change.	• Opening lines of communication across functions • Establishing communication channels and broadcasting them broadly • Creating awareness about the upcoming changes • Creating a consistent messaging that aligns with the organization's vision • Overcommunicating goals, expectations, and actions • Being transparent and open to dialogue • Centralizing and streamlining communication • Repeating a consistent message across channels • Establishing connectivity across employees • Communicating purpose, goals, and next steps to larger organization via town hall meetings

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Cloud COE engagement goals		
Goal	**Why it's important**	**How to achieve it**
Encouraging collaboration and engagement	To continually drive the rate of innovation with cloud adoption, the Cloud COE should encourage cross-functional collaboration and look for ways to foster it within their teams and across the organization.	• Hosting frequent training and knowledge-sharing sessions • Driving semiregular scrum of scrums to drive common component reuse • Building and maintaining collaborative documentation • Conducting hackathons • Making communication between groups as seamless as possible • Bringing the teams together, ideally physically, as often as possible • Supporting the team's successes • Training and developing employees • Recognizing and acknowledging employees • Encouraging flexibility

Some employees are likely to be skeptical of the Cloud COE and its purpose. To overcome this skepticism, Cloud COE team members need also to build credibility. They do this in large part by:

• Driving consistency across the organization by defining guard rails

• Providing transparency to the metrics by defining, capturing, and reporting on KPIs that are important to the business

• Being responsible for actively sharing success stories, as well as learning from failures with the wider organization

Checklist: What's your readiness for a Cloud Center of Excellence?

A well-designed and thoughtfully implemented Cloud Center of Excellence will not only help to jump-start a large-scale, organization-wide transformation, but it also accelerates an organization's transition to the new operating model.

To evaluate your readiness for establishing and managing a Cloud COE, apply the following checklist:

Cloud COE prerequisites
To establish a Cloud COE in your organization, you will need to take into account several important considerations, or prerequisites. Without them, it would be extremely difficult to gather the support and momentum required for a Cloud COE to be successful.

☐	**Identify/recruit executive sponsors**	To establish a Cloud Center of Excellence, you need a strong executive sponsorship team. Sponsors should have access to the C-suite in order to secure the funding and resources necessary to establish a Cloud COE.
☐	**Secure Cloud COE funding**	A Cloud COE requires funding. This may take the form of FTEs or resources dedicated to the group, budget for training, or budget to purchase products to fuel cloud solutions. Determining the budget available will inform the size and scale of the Cloud COE. It can take months to set up a Cloud COE, so it is important to account for this initiative's recruitment and onboarding phases.
☐	**Identify/recruit Cloud COE members**	The foundation of a successful Cloud COE is its members. The level of expertise, vision, and willingness to build the necessary tools for cloud delivery will dictate the success of the Cloud COE and the cloud implementation. Therefore, it is important to select Cloud COE members carefully. These members can be recruited internally, if they fit the qualification criteria, or can be hired externally. The two main qualifying criteria for members are: • Highly technical experience in cloud offerings • Excitement about cloud offerings

Cloud COE training

Training the right resources, at the right time, with the right tools is an important aspect of establishing a Cloud COE. Select Cloud COE members before defining a training plan, and then train them well.

	Train Cloud COE members	The following cultural and technical training can be considered by an organization for Cloud COE enablement. These trainings are suitable for Cloud COE members, the executive team, and cloud users: • Cultural training • GCP training • GCP certification • Agile training

Cloud COE establishment

Once the executive sponsors, funding, and Cloud COE members are aligned and trained, it's time to begin building the Cloud COE. You'll need to complete these high-level steps before you can begin building cloud solutions.

	Define Cloud COE vision	A vision expresses a desired end state. To manage change successfully, you need to define how the Cloud COE will support the business in achieving this end state. The vision needs to be concrete, inspirational, attainable, focused, within scope, and simple.
	Define Cloud COE strategy	Once a vision is established, the Cloud COE and executive team need to define the best way to implement it. To better define an implementation strategy, a Cloud COE can conduct an organizational analysis.
	Excite employees	To excite employees, both the executive team and the Cloud COE need to engage, communicate with, and encourage them. This approach will help build the necessary momentum to deploy to the cloud and build trust for the Cloud COE.
	Build credibility	To establish trust and encourage employees to use Cloud COE offerings, the Cloud COE will need to build credibility across the organization. To accomplish this: • Define KPIs • Run pilot projects • Communicate often and through consistent communication channels • Be transparent with employees and address their concerns • Hold town halls, when appropriate, to address questions and communicate important decisions

Cloud COE deployment

Before deployment to the cloud can begin, the Cloud COE will need to develop frameworks and tools to be used in that deployment. There are several high-level steps for establishing cloud governance.

☐	**Establish operating principles**	Define the Cloud COE charter. This charter should specify goals, operating guidelines, workstreams, key roles, and responsibilities for the group. When developing these principles, consider the following: • Networking • CI/CD • Programmable infrastructure
☐	**Define deployment plan**	Setting a plan helps you define how cloud solutions will be deployed in the organization. In addition, it will help establish how the solutions will be built with respect to sprint cycles, team members, release cycles, and other relevant factors.
☐	**Encourage best practices**	The Cloud COE should build a process where employees are actively capturing best practices and incorporating them into their work. The Cloud COE should have visibility into these practices so as to ensure both that these best practices are aligned with the frameworks developed and that they are incorporated across the organization.
☐	**Define cloud roadmap**	Defining the future of the cloud within an organization is one of the responsibilities of the Cloud COE. For this reason, the Cloud COE should work with the executive team to define next steps, future offerings, and potential cloud offerings that align with the larger organizational strategy.

Cloud COE management

After deploying to the cloud, the Cloud COE will continue to work on capturing best practices and establishing a process for incorporating those practices in the different functions. During this stage, Cloud COE members will primarily manage and improve cloud usage. Having the members involved in this way also helps to ensure a culture of cloud knowledge and thought leadership in the organization.

☐	**Cloud COE management**	To accomplish the goals of this stage, the Cloud COE should consider how they will manage the following: • Cost control • Data management • Instrumentation • Identity and access • Incident management