



Public cloud infrastructure comparison: IBM Cloud vs. Google Cloud

When it comes to choosing a cloud service that's right for your business, there are more options now than ever before. But as your business needs expand, the variety of choice means it can be difficult to make a decision.

At Principled Technologies, we researched and compared publicly available information about two cloud services from IBM and Google. IBM Cloud is an enterprise, full-stack cloud computing platform that provides public, private, and hybrid environments. In this report, we present several areas where organizations may find advantages in IBM Cloud offerings.

IBM Cloud offers...

Highly customizable
bare metal solutions

Faster-than-HTTP
transfer speeds

A flexible object
storage class tier

A robust cloud
backup system

Video-on-demand and
geographic access control

Bare metal offerings

Most cloud providers offer a broad range of virtualized instances to meet the demands of many generalized workloads. However, there are still cases where having dedicated access to a server's resources is crucial. Perhaps you may have applications with strict security or regulatory requirements that could be better satisfied with dedicated bare metal servers. For these and other specific use cases, the cloud may not seem to be a viable option. On the contrary, however, some cloud providers now offer bare metal solutions that give users dedicated access to an entire server.

IBM Cloud offers bare metal solutions with hundreds of highly configurable options to cater to performance needs. You can choose from single- to quad-socket servers, customize the amount of RAM, and choose from several drive types and sizes to get exactly what you need for your workload.¹ Google Cloud Platform™ does not offer any bare metal servers. Their website states that their virtual servers offer better performance than bare metal, but the study they use for these claims is limited.² Claiming better performance also doesn't answer concerns about virtual servers that center on security issues.

Another benefit to using IBM bare metal solutions is that you can get SAP-certified configurations.³ As Google Cloud does not offer bare metal servers, they offer SAP certification for only virtual servers.⁴

Flexible GPU options from IBM Cloud can help compute-intensive workloads

If you are searching for bare metal server solutions for gaming, deep learning, AI, machine learning, and other compute-intensive applications, then GPUs are probably going to factor into your considerations. IBM Cloud offers GPUs on both bare metal and virtual servers. The only GPU options from Google Cloud are virtual server instances, as Google Cloud doesn't offer bare metal instances. These instances are subject to termination during weekly host maintenance events.³

Storage considerations

Object storage

All cloud providers offer object storage, but not all object storage is created equally. For companies that transfer a lot of data, transfer speeds are important considerations. How long will users wait for data to transfer? Even relatively short periods of time can add up over days and weeks across your user base. With IBM Cloud, organizations can benefit from the native integration between IBM Cloud Object Storage and Aspera® high-speed data transfer service. At no additional cost for traffic using the IBM high-speed network, and with no charge for transferring to the cloud (ingress), IBM claims object storage users can get transfer speeds faster than HTTP.⁵ Aspera data transfer relies on patented Fast and Secure Protocol (FASP®) transport technology to bypass traditional network bottlenecks and facilitate many sizes of transfers.⁷

Google Cloud offers gsutil, a command line tool for data transfers. Google recommends using gsutil or their drag-and-drop console to transfer data to and from the cloud. gsutil offers options that can perform parallel batch uploads to help improve transfer speeds.⁸ For transfers between Google Cloud and other cloud service providers, Google offers Storage Transfer Service.⁹

While both IBM Cloud and Google Cloud offer multiple object storage class tiers, only IBM offers a flexible tier. IBM Cloud's Flex storage class suits workloads with unpredictable access patterns. When the workload is slow, IBM Cloud will charge less for storage and a fee for retrieval. When the workload picks up and retrievals exceed a certain threshold, IBM Cloud will increase storage fees but waive retrieval fees.¹⁰

IBM Cloud provides users additional flexibility with their policy-based automatic data-tiering. When an application or workload retrieves data less often, policies activate that automatically move the data to cheaper, long-term archive buckets.¹¹ Google Cloud offers Object Lifecycle Management, which allows users to set rules that can delete files or adjust the storage class; however, those rules are not based on frequency of access, but on other factors such as days since file creation or if it's live vs. archived.¹²

Want to take cloud object storage out for a test run? You could get more out of IBM Cloud. Its free tier offers up to 25 GB of storage, 2,000 PUT requests, 20,000 GET requests, 10 GB of data retrieval, and 5 GB of public outbound bandwidth using Aspera high-speed transfer per month.¹³ The free tier of Google Cloud offers up to 5 GB of storage and 1GB network egress per month.¹⁴

Block storage

Traditional drives and storage configurations allow multiple applications and hosts to access the same device. IBM Cloud Block Storage enables you to continue this practice by attaching up to eight hosts to a single block storage volume.¹⁵ With Google Cloud, you can share persistent disks between multiple instances if the disks are set to read-only mode, meaning that the data on that disk is static and cannot be changed.¹⁶

File storage

File storage is another common type of cloud storage offering. For web services, media, database backups, and similar use cases, file storage can be the best way to share files across several instances.

IBM Cloud offers its File Storage service, while Google Cloud has Cloud Filestore.¹⁷

IBM Cloud File Storage offers four endurance-level tiers and one performance-level tier of file storage to its users. Both tiers receive up to 48K IOPS.¹⁸ Google Cloud offers three tiers of file storage with up to 30,000 read or 25,000 write IOPS.¹⁹ In addition, IBM Cloud offers snapshots for file storage users while Google does not.^{20,21} These snapshots also allow IBM to offer volume duplication.²²

Backup solutions

Because backups are essential for disaster recovery and restoring lost files or corrupted data, a cloud solution should have a robust backup solution available for customers.

IBM Cloud customers can leverage IBM Cloud Backup, which allows you to back up data between IBM Cloud servers across IBM Cloud data centers. IBM Cloud Backup offers automation, system recovery, and agents for common application plugins that work with the Cloud Backup WebCC browser utility.²³ For Google customers, backup options are limited to the Cloud Tools for PowerShell command line utility, which allows users to back up data from local machines to cloud storage. The utility offers some integration with SQL instances and a few other applications.²⁴

Management, monitoring, and tech support

After you've built a functional cloud environment, the next step is to keep things running smoothly. The IBM Multicloud Manager helps you manage Linux® Kubernetes® environments, whether they live in the IBM Cloud, a private cloud, or with other cloud providers. With Multicloud Manager, your organization can deploy, automate, review, and set consistent security and governance policies across all your Kubernetes clusters.²⁵ While Google offers management and monitoring tools, none offer a full-bodied management environment that reaches across several external cloud providers and on-premises environments.²⁶

If a critical application goes offline, time is of the essence. When something goes wrong with your cloud, tech support can help get your business back up and running. IBM Cloud and Google Cloud both offer several tiers of tech support, but there are important differences in the details.

Both cloud providers have a free support tier, with IBM Cloud offering 24/7 access via tickets, phone, and chat. But the Google Cloud service's free support tier offers billing support and read-only access to break/fix cases. Even the highest tier of Google Cloud support limits chat support to billing issues and offers 24/7 support for only critical issues. In addition, the highest tier of IBM support allows users to pay by month, whereas the highest-tier Google Cloud support requires a one-year commitment.^{27,28}

Research summary

Cloud feature	IBM Cloud	Google Cloud
Bare metal	<p>Hundreds of highly customizable bare metal configurations</p> <p>Bare metal configurations with physical NVIDIA® GPUs</p>	<p>No bare metal offerings</p> <p>No bare metal configurations with any GPUs</p>
Object storage	<p>Aspera high-speed data transfer default with all object storage buckets</p> <p>Flex storage class bucket for unpredictable data</p> <p>Auto-tiering of data through policies</p> <p>Free object storage tier offers up to 25 GB of storage for an unlimited time</p>	<p>Offers CLI-based or drag-and-drop transfers that leverage parallel uploads to increase speeds.</p> <p>No flexible storage classes</p> <p>No data auto-tiering based on access frequency</p> <p>5 GB of free storage</p>
Block storage	<p>Attach up to eight instances to each block storage volume</p>	<p>Attach multiple instances in read-only mode</p>
File storage	<p>Five tiers of storage up to 48K IOPS</p> <p>Offers snapshots and duplication</p>	<p>Three tiers of storage up to 30K read IOPS or 25K write IOPS</p> <p>No snapshots or duplication</p>
Backup	<p>Fully featured backup solution with automation</p>	<p>Basic backup offerings via command line tools</p>
Management, monitoring, and tech support	<p>Use Multicloud Manager for Kubernetes environments across IBM, public clouds from other providers, and private clouds</p> <p>Free tier of tech support offers 24/7 access</p> <p>24/7 access to support services for all requests</p>	<p>No multi-cloud management</p> <p>Free tier of tech support offers only billing support</p> <p>24/7 access to support only for critical events</p>

Conclusion

Finding a cloud solution to fit your growing business needs can be challenging. You need all the information you can get to make an informed decision. In our review of cloud solutions from IBM and Google, we found several areas of note that could push your decision toward IBM Cloud services, including their robust bare metal options, faster-than-HTTPS transfer speeds, and advanced streaming options.

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