Iowa hot docs login

[{ type: thumb-down, id: hardToUnderstand, label:Hard to understand },{ type: thumb-down, id: incorrectInformationOrSampleCode, label:Incorrect information or sample code },{ type: thumb-down, id: missingTheInformationSamplesINeed, label:Missing information/samples I need },{ type: thumb-down, id: otherDown, label:Other }] [{ type: thumb-up, id: easyToUnderstand, label:Easy to understand },{ type: thumb-up, id: solvedMyProblem, label:Filed my problem, },{ type: thumb-up, id: otherUp, label:Other }] Computing Engine resources are hosted in multiple locations around the world. These locations are composed of regions and areas. A region is a specific geographic location where you can accommodate your resources. The regions have three or more zones. For example, the Us-Westregion1 denotes a region on the west coast of the United States that has three zones: us-west1-a, us-west1-b and us-west1-c. Resources that live in an area, such as virtual machine instances or persistent zonal disks, are called zonal resources. Other resources, such as static external IP addresses, are regional. Regional resources can be used by any resource in that region, regardless of the area, while zonal resources can only be used by other resources in the same area. For example, to attach a persistent zonal disk to an instance, both resources must be in the same area. Similarly, if you want to assign a static IP address to an instance, the instance must be in the same region as the static IP address. Placing resources in different areas of a region ensures isolation from most types of errors in physical infrastructure services and infrastructure software. Putting resources in different regions provides an even greater degree of independence for failure. This allows you to design robust systems with resources spread across different areas of failure. Only certain resources are specific to the region or area. Other resources, such as images, are global resources that can be used by any other resources in any location. For information about global, regional, and zonal computing engine resources, see Global, Regional, and Area Resources. Compute Engine zones and clusters implement an abstraction layer between the zones and the physical clusters in which the zones are hosted. A cluster is a distinct physical infrastructure that is hosted in a data center. Each cluster has independent software infrastructure, power, cooling, network and security infrastructure and includes a large pool of computing and storage resources. Each area is hosted in one or more clusters, and Compute Engine independently maps the areas to clusters for each organization. For example, the Us-Central1 area for your organization might not be able to use the U.S. area. Cluster decoupling areas provide a Benefits for you and to calculate the engine: It allows Compute Engine to ensure that resources are balanced within clusters in a region. The list of areas to choose from remains manageable because Compute Engine continues to grow its regions over time, adding more clusters. For most organizations, Compute Engine ensures that all projects in an organization have a consistent area for cluster mapping. For organizations with projects that use access to VPC Network Services or private services to share networks or services with other organizations, Compute Engine tries to ensure that all peerized organizations have a consistent area for cluster mapping. For large-scale SaaS providers, for example, Compute Engine may not provide consistent mapping for all peered organizations. In these cases, Compute Engine ensures that the charged projects have a consistent area for cluster mapping. Choose a region and zone Choose which region or area hosts your resources, which control where your data is stored and used. Choosing a region and area is important for several reasons: Managing errors Share resources across multiple areas and regions to tolerate interruptions. Google designs areas that are independent of each other: one area usually has power, cooling, network, and control plans that are isolated from other areas, and most single failure events will only affect one area. This way, if an area becomes unavailable, you can transfer traffic to another area in the same region to keep services running. Similarly, if a region is experiencing any disruption, you should have backup services running in another region. For more information about resource distribution and design of a robust system, see Design robust systems. Low network latency To reduce network latency, you might want to choose a region or area that is close to the service point. For example, if you mostly have customers on the U.S. East Coast, then you might want to choose a primary region and an area that is close to that area and a region and a reserve area that is also close. Identification of a region or zone Each region in the Calculation Engine contains a number of zones. Each zone name contains two parts that describe each area in detail. The first part of the area name is the region, and the second part of the name describes the area in the region: Regions are area collections. Areas have high bandwidth and low latency network connections to other areas in the same region. To deploy error-tolerant applications that high availability, Google recommends deploying apps in multiple areas and regions. This helps protect against unexpected component errors, up to and including a single area or region. Choose regions that make sense for your scenario. For example, if you only have customers in the U.S. or if you specific needs that require your data to live in the U.S., it makes sense to store resources in areas of the u.S.-central region or areas of the U.S.-east region1. Zone A is an isolated location in a region. The fully qualified name for an area consists of <region>-<zone>. For example, the fully qualified name for the area of the Us-Central region1 is us-central1-a. Depending on how much you want to distribute resources, create instances in multiple areas in multiple regions for redundancy. Available regions and ranges The following sortable table allows you to select different options to see where resources are available. For example, you can select Europe from the Select Location and M2 drop-down menu from the Select Machine drop-down menu to see a list of areas where M2 machines are available in Europe. Each area supports a combination of Ivy Bridge, Sandy Bridge, Haswell, Broadwell, Skylake or Cascade Lake platforms, as well as the AMD EPYC Roma platform. When you create an instance in a range, the instance uses the supported default processor in that area. For example, if you create an instance in the U.S.-1 area, the instance uses a Haswell processor by default, unless you specify another option. Alternatively, you can choose the CPU platform you want. For more information, read Specify a minimum CPU platform for VM instances. Note: Local SSDs are available in all regions and areas. GPUs are only available in certain areas. Single rental is available in all regions and areas, and the types of single tenant nodes are available for each appropriate car type offered in that area, except for E2 car types, which do not support exclusive rental. APAC North America South America Europe E2 N1 N2 N2D M1 M2 C2 GPU Zone Location Machines Types Of Processors Resources Asia-East1-Changhua County, Taiwan, APAC E2, N2, N2D, N1, M1, C2 Ivy Bridge, Broadwell, Skylake, Cascade Lake, AMD EPYC Rome GPU asia-east1-b Changhua County, Taiwan, APAC E2, N2, N2D, N1, M1, C2 Ivy Bridge, Broadwell, Skylake, Lake Cascade , AMD EPYC Roma GPU asia-east1-c Changhua County, Taiwan, APAC E2, N2, N2D, N1, M1, C2 Ivy Bridge, Broadwell, Skylake, Cascade Lake, AMD EPYC Rome GPU asia-east2-asia-east2-basia-east2-c Hong Kong, APAC E2, N2, N1 Broadwell, Skylake, Lake Falls Asia-Northeast1-a Tokyo, Japan, APAC E2, N2, N1, M1, C2 Broadwell, Skylake, Cascade Lake GPU asia-northeast1-b Tokyo, Japan, APAC E2, N2, N1 Broadwell, Skylake, Cascade Lake asia-northeast1-c Tokyo , Japan, APAC E2, N2, N1, M1, C2 Broadwell, Skylake, Cascade Lake GPU asia-northeast2-asia-northeast2-basia-northeast2-c Osaka, Japan, APAC E2, N1 Skylake Seul, Coreea de Sud, APAC E2, N1, C2 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Haswell, Broadwell, Skylake, Cascade Lake, AMD EPYC Roma new-east1-c Moncks Corner, South Carolina, North America E2, N2, N2D, N1, M1, C2 Haswell, Broadwell, Skylake, Cascade Lake, AMD EPYC Roma NEW-East1-d Monsck St , South Carolina, North America E2, N2 , N2D, N1, M1, C2 Haswell, Broadwell, Skylake, Cascade Lake, AMD EPYC Rome new-east4-a-Ashburn, Virginia, North America E2, N2, N2D, N1, M2, M1, C2 Broadwell, Skylake, Cascade Lake, AMD EPYC Roma GPUs us-east4-b Ashburn, Virginia, North America E2, N2, N2D, N1, M2, M1, C2 Broadwell, Skylake, Cascade Lake, AMD EPYC Roma GPUs us-east4-c Ashburn , Virginia, North America E2, N2, N1 , M1, C2 Broadwell, Skylake, Cascade Lake new-west1-a Dalles, Oregon, North America E2, N2, N1, M1, C2 Broadwell, Skylake, Cascade Lake new-west1-b Dalles, Oregon, North America E2, N2, N2D, N1, M1, C2 Broadwell, Skylake, Cascade Lake, AMD EPYC Roma new GPU-west1-c Dalles, Oregon, North America E2, N2, N2D, N1, C2 Broadwell , Skylake, Waterfall Lake, AMD EPYC Roma non-west2-Los Angeles, California, North America E2, N1, M2, C2 Broadwell, Skylake, Cascade Lake us-west2-b Los Angeles, California, North America E2, N1, M1 Broadwell, Skylake new-west2-c LOPs, California, North America E2, N1, M2, M1, C2 Broadwell, Skylake, Cascade Lake new-west3-aus-west3-bus-west3-c Salt Lake City, Utah, North America E2, N1 Skylake new-west4-aus-west4-bus-west4-c Las Vegas , Nevada, North America E2, N2, N1 Skylake Cascade, Lake Lake Regions announced Google will continue expanding into the following new regions: Warsaw, (Poland) Melbourne, (Australia) Toronto, (Canada) Delhi, (India) Doha, (Qatar) Transparent maintenance Google regularly maintains its infrastructure by patching systems with the latest software, conducting routine tests and maintenance and generally ensuring that Google's infrastructure is as fast and efficient as Google knows how to do it. Written Written all instances are configured so that these maintenance events are transparent to applications and workflows. Google uses a combination of data center innovations, operational best practices, and live migration technology to move the instances of the virtual machine running out of the way of the maintenance that is being carried out. The instance continues to run in the same area without any action on your part. By default, all virtual machines are set to migrate live, but you can also set virtual machines to stop and restart. The two options differ in the following ways: Live migrates Compute Engine automatically migrates the operating instance. The migration process will have an impact on guest performance to some extent, but the instance remains online throughout the migration process. The exact impact on guest performance and duration depends on many factors, but most apps and workflows are not expected to be observed. For more information, see Live migration. Stop and restart the Calculation Engine automatically signals the instance to close, waits a short time for it to close clean, and then restarts it away from the maintenance event. For more information about setting the above options for instances, see Set instance planning options. Area impairment It is never necessary to decommission an existing area for a refresh of ground infrastructure (food, cooling, network fabric, servers and so on). Infrastructure refreshes are rare, and areas typically run for three to five years between refreshes. These refreshes should be transparent to customers. If it ever becomes necessary to depreciate an area, Compute Engine will notify users well before it goes offline, so you have enough time to move virtual machine instances and workloads. Quotas Certain resources, such as static IPs, images, firewall rules, and VPC networks, have defined project-level quota limits and quota limits for each region. When you create these resources, they count for the total quota at the project level or for the quota by region, if any. If any of the affected quota limits are exceeded, you won't be able to add more than one resource of the same type to that project or region. To see a complete list of odds that apply to your project, visit the Odds page of the Google Cloud Console. For example, if the overall target funding share is 50 and you create 25 target groups in examples-region-1 and 25 target pools in example-region-2, tap the project-level quota and you won't be able to create more in any region of the project until you free up space. Similarly, if you have a region quota of 7 RESERVED IP addresses, you can reserve up to 7 IP addresses in a single region. After you reach this limit, you'll either need to book IP addresses in a new region or launch some IP addresses. Tips When selecting areas, here are some things to keep mind: Communication within and between regions will incur different costs. In general, communication within regions will always be cheaper and faster than communication between different regions. Design important redundancy systems in multiple areas. At some point, the instances may have an unexpected error. To mitigate the effects of these possible events, you need to duplicate important systems in several areas and regions. For example, by hosting courts in Europe-West1-b and Europe-West1-c, if Europe-west1-b fails unexpectedly, your courts in Europe-West1-c will still be available. However, if you host all courts in Europe-west1-b, you will not be able to access any instance if Europa-West1-b goes offline. Also consider hosting resources in all regions. For example, in the unlikely scenario in which the Europe-West region1 is facing a failure, consider hosting back-up stakes in an area of the Europe-West region3. For more tips on designing systems for availability, see Designing robust systems. What follows [{ type: thumb-down, id: hardToUnderstand, label:Hard to understand },{ type: thumb-down, id: incorrectInformationOrSampleCode, label:Incorrect information or sample code },{ type: thumb-down, id: missingTheInformationSamplesINeed, label:Missing information/samples I need },{ type: thumb-down, id: otherDown, label:Other }] [{ type: thumb-up, id: easyToUnderstand, label:Easy to understand },{ type: thumb-up, id: solvedMyProblem, label:Solved my problem },{ type: thumb-up, id: otherUp, label:Other }]