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All You Need to Know about the Public Cloud

In simple language about the complicated matter, understandable for everyone.

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Foreword

Some words why this book is the must to read

Cloud solutions market keeps showing aggressive growth. As per Gartner analytical agency, in 2020 the share of large companies using cloud architecture will grow from 5% to 20% around the world; and by 2025 it will be whooping 80%. This is explainable: cost of services becomes more affordable, while to manage a cloud infrastructure is times easier than an on-premise platform.

As a demand for clouds grows, hosting providers, Data Centers and system integrators offer hundreds of services designed to solve a variety of client's business tasks. It's easy to get lost among these offers for a novice user – while to choose the solution that really fits in not an easy task. Many providers, "wrapping" a service improperly, make the "fit-this-very-business" selection even more complicated.

Often a corporate sector is offered services that are better fit for SMB segment – where the technologies in use cannot guarantee the degree of failsafe performance large businesses ask for.

The problem has the solution: one should learn to differentiate the offers and to get familiar with cloud terminology.

This manual will become the true crib sheet for you, allowing hassle-free navigation around cloud market offers.

You will learn to choose the proper solutions only: those fitting your very own specific tasks.

What is Cloud?

The “cloud” term per se ceased to raise eyebrows long ago. Today virtually every smartphone user keeps personal photos at allocated cloud storage, as it is reliable and allows freeing mobile device resources. But this is not an example for business.

Companies operate clouds somewhat differently: business entities often move their own infrastructures to cloud platforms, deploy virtual servers, dropping the need to use their own equipment – as well as the necessity to maintain it by staff specialists. Thus the hardware issues become a provider’s responsibility, while company personnel focus on more field-specific tasks, having sustainable systems of high business value at disposal.

It is important to comprehend: if a company has chosen a virtual (cloud) infrastructure over physical servers – then those servers, probably located in a separate room previously, will be re-formatted as virtual machines (VMs), stored at a provider’s cloud platform. VMs are operated the very same way as were the common servers, yet levels of both availability and security will be much higher in a cloud model.

But what does “cloud stuffing” consist from?

From the physical point of view a cloud is a combination of equipment and data storage systems, on top of which there are specialized software and various technological solutions responsible for specific functionalities.

An end user, probably, should not rack its own brain over specifics of cloud’s internal arrangement. But to possess the general depiction is obligatory.

On the Way to Serious Selection

As we are now familiar with the notion of cloud, let's move a level down. Abbreviations are indispensable in cloud terminology. In this book we'll touch the most popular term, directly connected to a public cloud.

As you might have already guessed, we'll talk about IaaS — Infrastructure-as-a-Service.

Today cloud market is divided into two IaaS segments:

01

Corporate

02

Non-corporate, or mainstream (alternatively called "the mass segment")

Which of these services to choose — we'll tell you later. Now let's see what IaaS is in general terms.

IAAS in General Terms

IaaS is a service offered by a cloud provider. It allows renting computing capacities: CPU, RAM, HDD — all of required configuration, with the possibility of subsequent scaling.

This offer’s main advantage is: a client does not need to care for equipment purchase, while the process of virtual server deployment takes merely minutes.

The possibility to avoid routine processes and shrink the time-to-production of end services from several months to several weeks places this solution into the top of the most demanded ones.

Mainstream IAAS or Corporate IAAS?

As a demand for clouds grows, the number of hosting providers offering cloud services grows each year too.

Up to date the niche of virtual infrastructure renting expanded dramatically. Web hosters, digital services providers, non-specialized companies like mobile operators or even banks joined the existing cloud market players.

Unfortunately, we keep witnessing cases when providers offer clients mainstream IaaS service disguised as corporate solution – stressing relatively low cost of the service.

How to differ a corporate cloud that is highly fail safer than a B2C cloud — which is essentially mainstream IaaS?

With no clear understanding of the difference a client is incapable of making weighted selection. If business operations continue using a service with limited capabilities, then a company is deprived of advantages that usage of full-scale corporate solution brings.

Some analogy: Full Service or Low Cost Carriers?

Comparing corporate and mainstream IaaS is like talking about a full service and a low cost carriers.

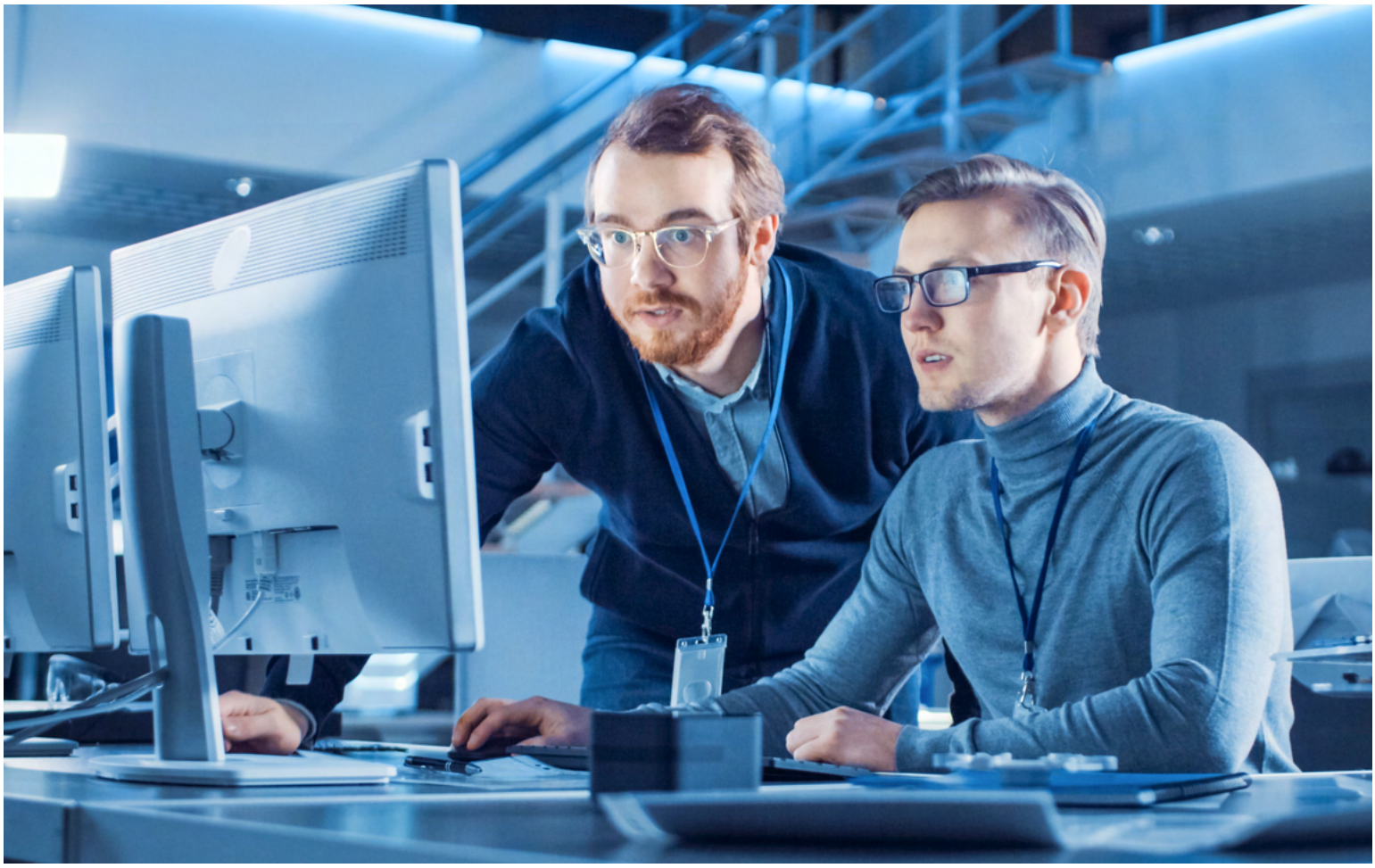
Services of a latter are fine if you are willing to save. A client knowingly takes the risk of limited and non-flexible service. Choosing a low-cost flight, there would hardly be an option to select a reclining seats, frequent flyer plans, or to reserve a special meal, or to use additional business services. The service is fixed, specific and extremely limited.

Before making a decision to use mainstream IaaS in a form of renting virtual servers — think which tasks you'll be solving. If your project has no specific requirements, then the mainstream choice may be right. But if there are tasks of scalability, with the necessity to provide high levels of service availability, reliability and security, with professional technical support and management — then a full-scale solution is your choice.

Such solution is a highly failsafe corporate cloud — the corporate IaaS.

Here the client receives an adequate service with great flexibility: numbers selection per your choice, platform renting to conduct conferences, requests of additional services. Any service expansion impacts the final cost.

Yet a client is provided with the required functionality – and pays for what is truly necessary for the business.



Mainstream IAAS Features

Small companies, most often VPS-/VDS-hosters that are fighting for new clients by expanding their portfolios with solutions of high market demand, act as mainstream IaaS providers.

As their financial situation is modest, such companies cannot afford costly equipment of high reliability; as well they cannot “land” cloud platforms at reliable Data Centers. In the majority of cases such providers use their own server capacities — reliability of which is out of the question.

Add here the policy to save on technologies in use. For example, instead of corporate level hypervisor (VMware) free open source virtualization is used, so a client is most often offered a control panel that is not really convenient from the usability point of view.

From the above said the conclusion on price can be made: the cost of such service will be understandably different from corporate level solutions.

Serious Solution for Serious Clients:

corporate IAAS features

Unlike mainstream IaaS (B2C cloud), corporate IaaS clouds are offered by more serious players: system or cloud integrators, or Data Centers that mostly serve the enterprise level clients.

Yet it is widely known: large business always means overstated requirements, vast number of complex systems and relatively high level of IT presence in company's daily life. Malfunction of a part of services can lead to irreversible consequences, so it is critically important to achieve guaranteed availability and quality of services. To tolerate even a single link falling out from a chain of a hundred — not possible!

So the main stake here is onto high fail safety, achieved due to use of modern technologies, reliable data storage systems and high-end corporate level equipment from leading suppliers. Important note: such companies place their equipment in super-reliable Data Centers — that cannot even be compared with those server platforms mainstream IaaS uses.

As for hypervisor (specific software installed on a physical server and allowing launch of virtual machines in its environment) – here, proven by time and hundreds of clients, virtualization technologies of leading companies, like VMware, are used.

Cloud control panel worth separate mentioning. Essentially it is a unified console with wide functionality.

The final outcome is closely connected with the client's convenience and ease of control panel usage.

STAFF SPECIALISTS ON A CLIENT'S SIDE USE THE CONSOLE TO BUILD THE OWN INFRASTRUCTURE IN A CLOUD:

- Create virtual machines
- Deploy the necessary software
- Move business-critical services
- Setup the network, etc.

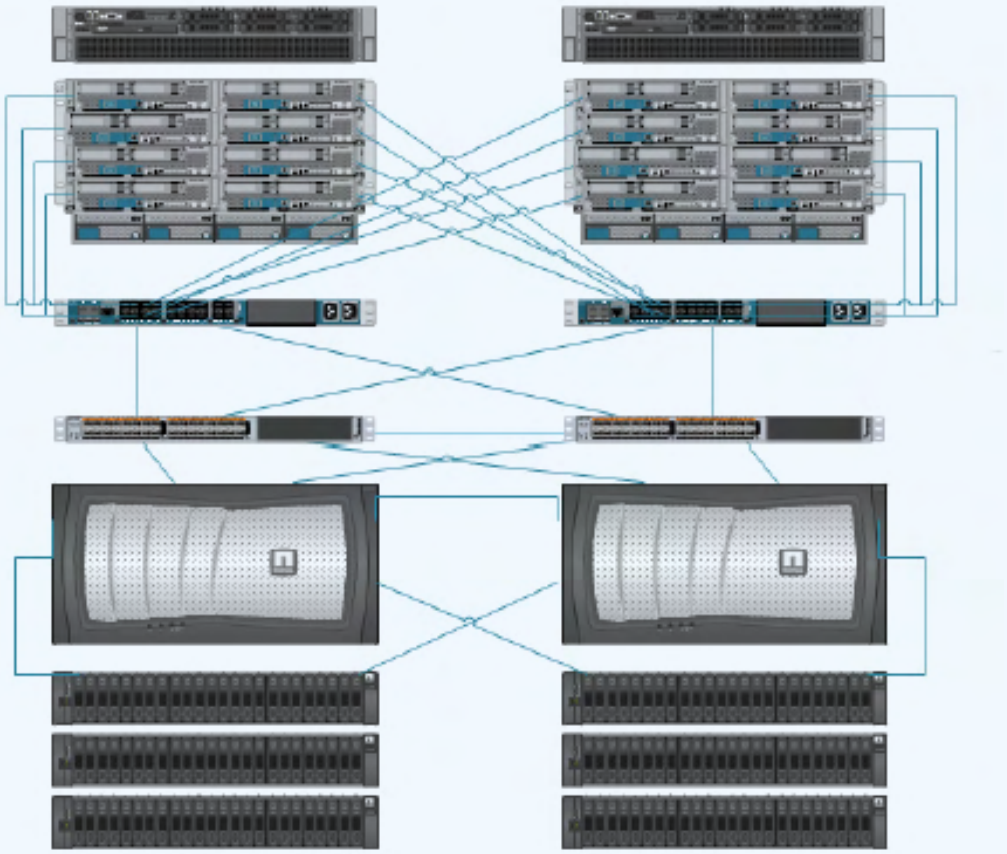


Fig. Cloud architecture from the inside

Apart from said above, corporate cloud provider pays special attention to an infrastructure and cares for an architecture in use to perform with no single point of failure. In other words, if a certain piece of equipment fails, this has no effect on performance of launched services. Automatic switch to a redundant infrastructure element occurs, while end users continue working in a common mode.

Rack and blade servers in use are equipped with redundant power and cooling units.

Also, reliable data storage systems, like NetApp, are used to store virtual machines' files. As a rule, capacity of such DSS allows to provide separate clients with dozens of thousands input/output operations per second.

Abstract Values vs Specific Prices

Should IAAS service be evaluated by price?

Any project – regardless of being small or large, connected either to local or to cloud infrastructure — requires planning, preliminary calculations, analysis of a situation and full comprehension of a task.

Should IaaS service be evaluated solely by price? Advices below will help moving the right direction.

ADVICE 1.

Evaluate not by the price, but by the fact of achieving set targets

To consider IaaS service only by comparing the prices of various cloud providers – certainly an erroneous approach. Cheap does not mean bad, expensive does not mean high quality.

So, considering an IaaS service, aim for achieving business target(s) and final outcome first of all.

ADVICE 2.

Evaluating cost, consider the details

Learn it by heart: services are quite different. For one company the basis functionality is enough; another business needs additional options.

Often the cost of IaaS service consists of details. Keep in mind that added capacities influence the final cost.

ADVICE 3.

Don’t be penny wise: buy nice or buy twice

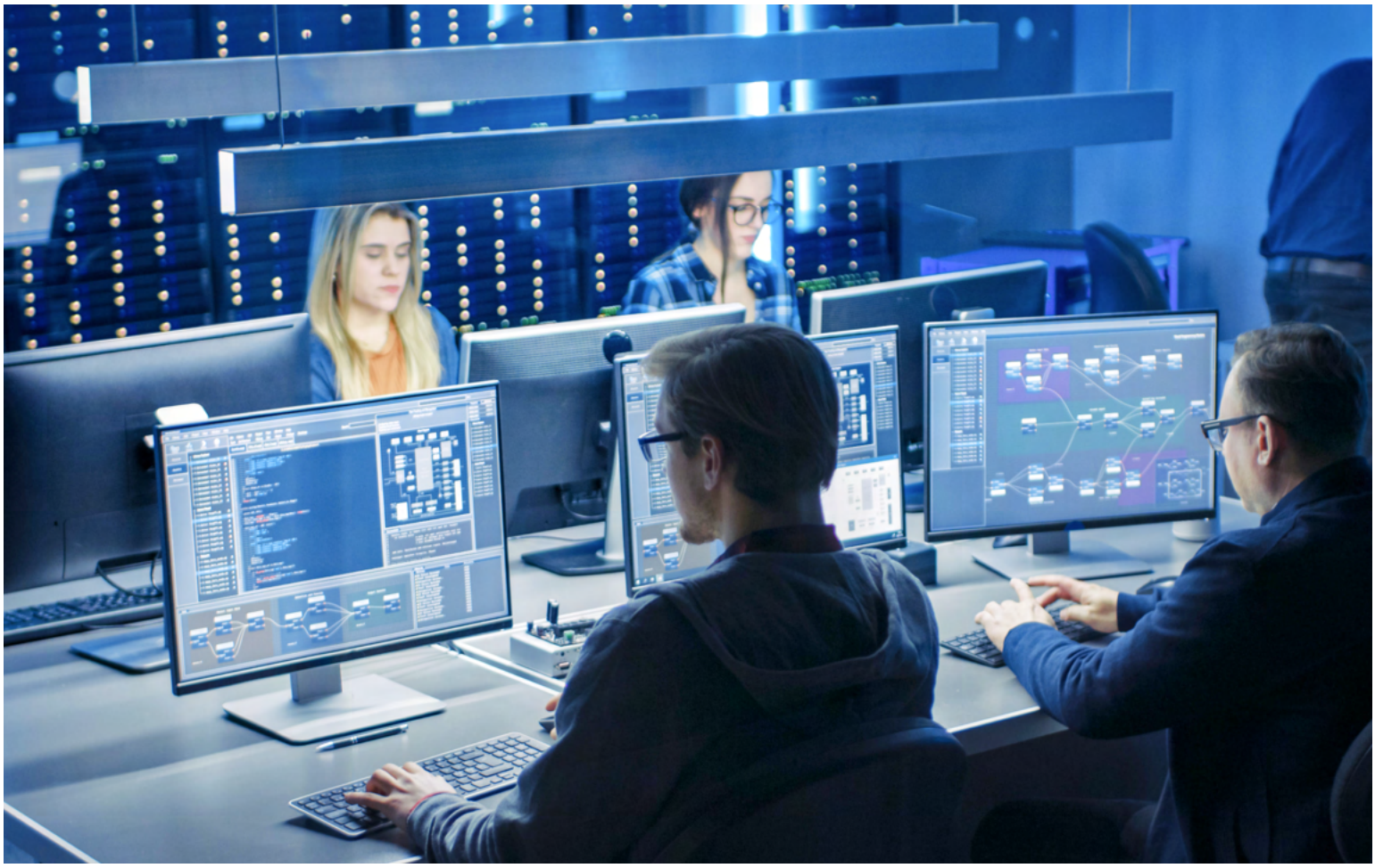
To chase the lowest cost is not the best way to save. Proven and high quality product is the best purchase. The service bought for little money may not fit the end product requirements.

The Competent Selection

Now let’s put on scales: mainstream IaaS vs corporate IaaS cloud. Which solution is your very best fit — depends on many aspects. The weighted approach is required; and do not forget that circumstances alter cases.

Let’s see for whom and under which conditions each of the scrutinized services will fit:

MAINSTREAM IAAS (VPS/VDS)	CORPORATE IAAS CLOUD
Expenses will be lower for a time to come. As soon as the need for better flexibility arises — it will be more complicated to reach the desired quality and outcome	A client receives wide opportunities and flexibility; staff saves time on absence of routine tasks. This way projects of any complexity can be implemented
Service is no fit for solid, highly loaded tasks — specifically when it comes to scalability issues	Service is fit for business tasks with variable needs. Design, launch, cloud platform configuration in this IaaS model are done in short terms
Service is fit for clients who have low cost, project launch speed, payment convenience and interface simplicity as their priorities	Service is fit for clients who have reliability, fail safety, performance, security, flexibility and technical support as their priorities
To solve a client’s tasks the provider uses low budget equipment; hosting platform reliability level does not exceed Tier III	The provider uses servers and data storage systems of leading manufacturers; the platform reliability level is Tier III or greater
Budget virtualization solutions like OpenVZ, Parallels Virtuozzo, Parallels Cloud Server, KVM, XEN, FreeBSD Jail, Microsoft Hyper-V in use	Corporate level VMware-based hypervisor (less often — Microsoft Hyper-V) in use



Which Service Suits Your Tasks —

let’s examine specific cases

As stated above, while choosing the option that suits your business: not only money should be put into consideration, but also the final outcome, the quality of solutions in use, the available functionality, comfort of work and time needed for the project implementation.

Example 1

You are creating a typified site, placing it on a provider's platform, launching a small online store or implementing a small project, or in general planning to use cloud services temporarily. Availability of your data is important but not critical.

You are wishing for an inexpensive access to allocated resources. With all these conditions in mind it is more logical to use mainstream ("mass") cloud hosting.

Example 2

Your company needs reliable, high performance platform for complex tasks. Availability, consistency, possibility to flexibly integrate and to limitlessly expand cloud resources are your priorities – then you should use IaaS cloud service from a corporate level provider. Choosing this kind of service, it is important to remember: the key moment of IaaS usage is the ability to cover all business requirements. Selecting this model, you're obtaining all tools to control the cloud environment, including operations with an array of applications – from the simplest to the most complex ones.

Thus, the main selection criterion is the distinct answer to the question: will all the opportunities of an offered service be enough? Or: will the technologies in use maintain the company's IT systems operations, keeping in mind all specific features of your IT infrastructure?..

The conclusions

Summarizing the above said, let us conclude: the IaaS service is the profitable investment into both business and personal brand development. Companies save using cloud technologies, since there is no need to purchase own equipment.

Thereby infrastructure redundancy issues, need to update inevitably aging gear, warranty service expenses and collateral costs become truly obsolete.

A client receives an opportunity to flexibly use computing capacities of a cloud platform, as well as wide functionality of a solution. Risks a client might face while managing its own infrastructure are minimized due to reliable cloud infrastructure and a hosting provider using proven solutions.

Yet the main task remains: to choose a cloud service correctly. The ultimate decision – to use B2C cloud or a highly failsafe corporate cloud – is fully yours. It is important to understand that model selection defines available opportunities.

There is the direct connection – whether or not your company will be able to deliver the efficiency potential of a cloud ecosystem, to lower expenses, to shrink the project implementation time and to reach set business goals.

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