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Dedicated Servers - Ebook

1. What is a Dedicated Server ?
2. How to choose a Dedicated Server ?
3. Key Features of a Good Dedicated Server
4. About Silicon House

Aim: This Ebook provides useful insights on what is a dedicated server, how to choose a dedicated server, shared web hosting vs dedicated servers, key features of a Good Dedicated Server.

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What is a Dedicated Server ?

Dedicated Server is a bare metal server which is allotted for a single client. This way the entire server configuration, software, settings can be customized according to the customer's requirement. Unlike shared reseller hosting, Dedicated Servers come with complete root or administrator access.

In a dedicated server customer can install, tweak any software or settings in their server. Also Dedicated Servers provide the highest level of security when compared to shared hosting environment as only one customer's websites or applications are hosted in the server and also server can be hardened for a better security.

Shared Hosting Vs Dedicated Servers – A Comparison

	Shared Hosting	**Dedicated Servers**
Deployment Time	Instant Setup: Shared Hosting runs as a part of a monster server. Since the server is already set up and running, to create an account takes little time.	Build Lead Time: Dedicated Servers require a server build lead time to go live. This is partly due to customizations in hardware or software requirement. But with recent automation developments, a bare metal server can be built, tested and deployed in few

		hours time.
Hardware Scaling	A single customer or site cannot monopolise the entire hardware resources. Key parameters such disk space, bandwidth can be scaled up instantly. But RAM [memory] and port speed cannot be scaled up immediately without downtime.	Dedicated server allows a single customer to utilize all its resources. Need for upgrade does not arise frequently. When it occurs, upgrade can be done in few min to few hours based on the nature of upgrade.
Privileges	Only account level access.	Full root privilege available.
Network	100 / 1000 Mbps	1 Gbps port speed
Software Customization	Standard Components and OS settings are available.	Allows complete customization of software present in the server. Can also allow installation of new software.
Resource Usage Limits	Shared Accounts are usually set up in Dual Hexa Core with 256 GB RAM servers with monster processing capabilities. Hence the general usage allowed would be 17 – 25 % of total resource for not more than 90 sec.	The entire resource allotted can be utilized. 100 % resource utilization is possible.
Recommended Users	Small portals, applications, ERPs, CRMs which are developed in standard php / mysql or asp / asp.net / mssql environment. Applications that does not require any high resources or customization in server side.	Best suited for large portals, ERPs, CRMs and can also host websites that require server side tweaking in software level. **Payment Gateways, Secure Applications, PCI compliance related websites, Large Media Streaming, Audio Streaming** can be hosted in dedicated servers.
Operational	Shared Hosting servers host	Best for running running highly secure,

Concerns	multiple domains in the same environment for different customers. Hence the hosting environment is standard and customization cannot be done to settings in the server side. For example php or asp configurations, memory limits, CPU usage etc. Also certain activities such as bulk mailing, newsletter sending in bulk, type of content hosted will be restricted or not allowed.	business applications, large portals, high end high db usage websites. However the hardware upgrade or change requires downtime. Scalability within short notice is difficult. Backup is easy using a secondary drive and remote backup also. Requires good co-ordination with developers, systems admins for complete utilization of the server resources.

How To Choose The Right Dedicated Server ?

Dedicated Servers Design Considerations

While choosing a Dedicated Server the following factors have to be considered;

User Base: This refers to users who will access the system online, like customers, vendors and partners. A system that is open to public will have to be designed to take unexpected spike in usage. Whereas a system that is closed within and organization such as vendors and partners must consider more about features and computing than user spikes as the number of users are known to greater extent. Scalability mainly depends on the type of application that is being run, either closed or open to public users.

Type of content that is delivered using the dedicated servers: This refers to the media in which the user receives the content. For example, html or other web pages, audio, video etc. If the content is delivered in rich media, then enough consideration must be given for past usage spikes, processing capability, network availability and capacity. For example a rich media delivery would require a minimum of 1000 mbps port speed for good performance where as html or webpage deliver would require only 100mbps port speed in a dedicated server.

Past Usage Spikes and Forecasts: Any dedicated server configuration design must be done based on data rather than intuition. This will help in designing the most optimum dedicated server configuration at the lowest possible cost. Each feature added must be authenticated by quality data and reasonable logic.

Security & Compliance: Certain industries such as finance, medical require data retention and security as per federal laws. In such cases extra care must be taken to meet those compliance procedures. For example HIPAAC and Sorbs – Oxley requires data to be transmitted and stored in a secured environment. It also requires retention of all data archival

for specific duration which can be achieved by designing proper firewall, intrusion detection and backup systems.

Type of Application and its Limitations: This is generally neglected while designing a dedicated server configuration. But it plays a vital role in performance as well as availability. Important factors such as application platform, back end database, connection methods, web services must be taken into consideration while designing a delivery system. Also the application has to be designed in such a way that it is multi-layered and highly portable. It is always advisable to at least have an application layer, data access layer and data layer.

Software, Hardware and Technology Scalability: This involves good level of interaction between the developers as well as dedicated server system architects. Any application must be developed in a highly scalable and robust environment. Be it the OS, scripting language, web server, database server or hardware, it must be selected with future in mind. A very good technology with less scope of development in future should be a lesser choice than a stable technology with a promising future.

Key Features of a Good Dedicated Server
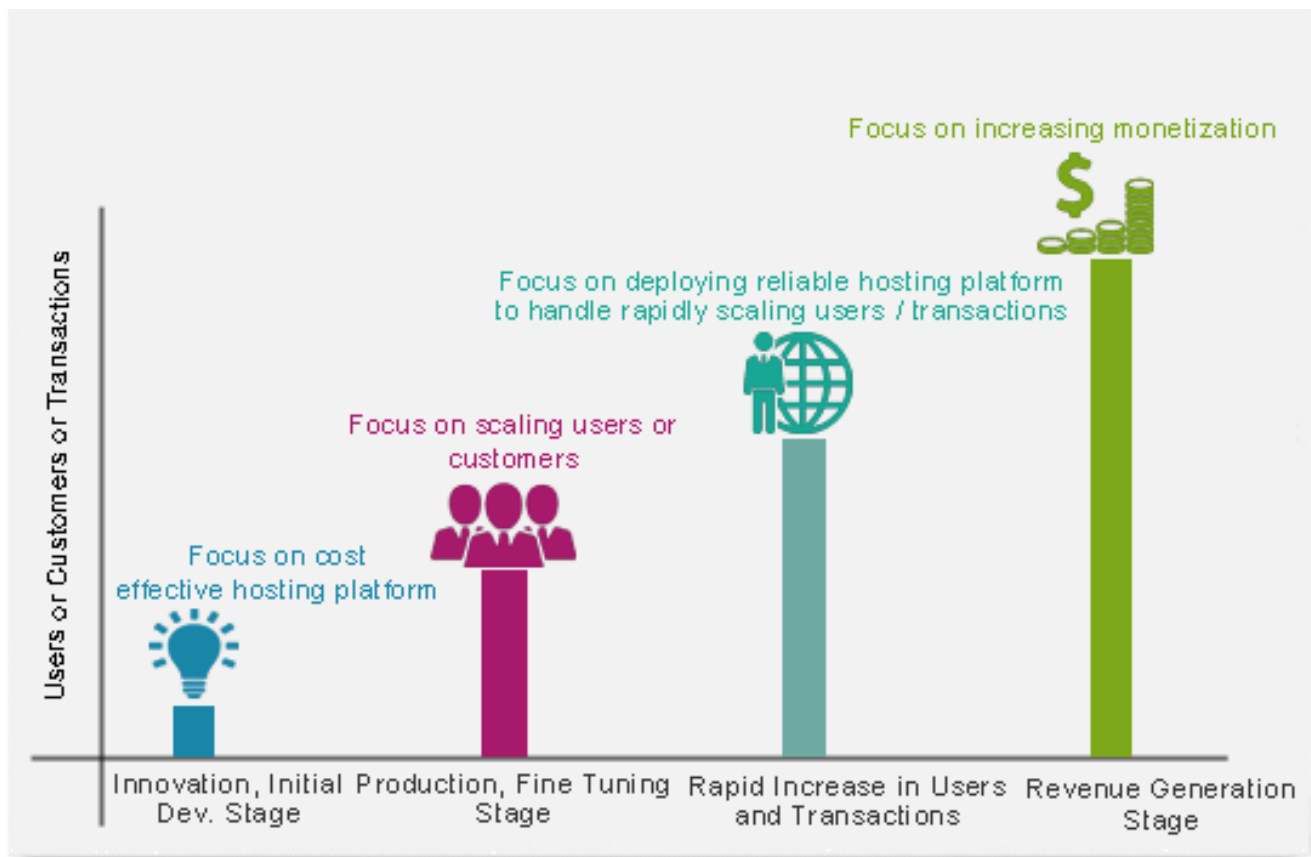
The features of a dedicated server depends on what type of dedicated server is chosen. Choice of a dedicated server configuration is based on what stage of scaling a customer is in. It varies from a start up to an already established business. The following points prioritizes the

features which are considered very very essential in choosing a dedicated server.

CPU: CPU is the computing power that you require in order to run your web applications or portal. Usually decided on number of cores that is required to run the applications or to handle any spikes in usage by customers. In a dedicated environment, it is better to start at least with a single quad core [4 cores] as many of the current applications, operating systems and software require good amount of computing power. While choosing for stability during load spikes a dual processor with 8 cores or 12 cores is much preferred. The CPU speed and scalability for future expansion must be kept in mind. Because there are few instances where upgrade cannot be done when the type cpu itself has limitations.

MEMORY: Memory is one of the most important feature which determines how your application or portal behaves when large number of users or heavy application runs in your server. In linux servers, memory also plays an important role in disk caching thus making it work faster. Heavy database servers, media streaming applications, large portals require very good amount of memory and free memory also. The basic would be to start with 8 GB and can be upgraded upto 512 GB RAM in latest devices. Like CPU, care must be to taken while choosing the type of server [cpu, mother board] as few have limitations in adding more RAM slots.

HARD DISKS: Disks play a vital role in speed with which your application runs when it comes to heavy disk I/O such as database servers, streaming servers, large portals. If disk writes are going to be very high, then it is better to go for a SAS or a SSD drive. SSD drive has one more advantage where in reads will be much faster than normal SATA drives. However in few cases writes are comparatively slower than few enterprise SATA. A combination of SSD for disk caching, read writes and SATA for back up can reduce the cost considerably.

Disks are continuously used and hence failure is something which is expected. However, RAID mirroring of disks will save to a large extent from such failures. RAID 1, RAID 5, RAID 10 are available options in a dedicated server environment.

NETWORK: The over all backbone to which the dedicated server is connected determines the speed with users can access the server. However more important is the port speed at which data travels out of the server first. 100Mbps, 1 Gbps , 10 Gbps are the available options. Higher the users, higher should be the port speed. In case of rich media content like videos, it is better to start with atleast 1 Gbps and 10 Gbps is preferred. 100 Mbps is something which can only be used in case of a Sandbox Environment.

SOFTWARE: Dedicated Servers come with various operating systems installed like Centos, Red Hat, Ubuntu, Oracle Linux, Windows. The choice of operating systems depends on what scripting language is used and what are the scaling options. For example, .net and asp pages work in windows where as php, mysql can work both in linux and windows dedicated servers. While open source operating systems and software allows scaling at a much cheaper cost, proprietary software selection should consider future licensing cost too.

Also application servers like tomcat, jboss would work in sync with web servers. These has to be considered carefully as scaling of dedicated servers to a high availability platform would require these components to work with Load Balancers, Active Failovers etc.

CONTROL PANEL: Control Panels like cPanel and Plesk can considerably reduce the work load of system admins. Hence it is widely preferred by System Admins to have a control panel installed in the dedicated servers. They also provide a consolidated view of the servers, allows key functions like http, ftp, database, email, DNS setup quickly. They also provide a way where in dedicated server owners can resell the space in the server as hosting provider.

About Silicon House

Silicon House is one of the largest Dedicated Servers and Cloud Server provider in India. Silicon House is highly specialized building and running Fully Automated Virtual Data Center spanning across three continents. The key difference is our expertise and experience in cutting edge technology to provide a practical and working solution for thousands of customers in more than 90+ countries.

Business Focus

Silicon House is a complete solution provider for dedicated servers, cloud servers, reseller hosting and domain registration. Our expertise is in implementing high availability, high performance and hybrid cloud / dedicated servers. The solutions that we offer are Fully Managed and hence we take care of the server side infrastructure while you can concentrate on your core businesses.

Innovate & Expertise

Innovation has allowed us to convert every problem presented to us into products such as Arrow Global Load Balancing, Arrow Apps Layer Syncing, Arrow Tomcat Plugin, Arrow DB Sync a multi-zone Database Layer Syncing, XMAIL Trac a mail tracking and archiving solution, Arrow Shield an intrusion detection system, Arrow Media Streaming Servers, Biz Intel Reporting. With over Two Decades of hosting expertise, we have converted these innovations into working solutions and keep building expertise in them.

Stats

Silicon House runs hundreds of servers serving customers in more than 90+ countries.

1. We handle more than 70 million emails per day
2. Our Fully Automated Virtual Data Center network spans over three continents, four countries
3. Our servers power more than 750,000+ websites
4. We are pioneers in building Fully Automated Virtual Data Centers integrated with multi-location cloud servers
5. Innovation is our base and we consistently do that. Our innovative development has resulted in products and services such as Arrow Global Load

Balancer, Arrow Apps Sync, Arrow Tomcat Plugin, Arrow Multi-Zone DB Sync, XMAIL Trac, Super Reseller Suite, Arrow Shield, Arrow Media Streaming Servers, Biz Intel Reporting etc.

Accreditation

Silicon House is a pioneer in introducing many services in web hosting industry in India. We are the pioneers in introducing Fully Managed Dedicated Server Hosting in India. We are the pioneers to introduce pre-hardened elastic cloud server hosting in India.

1. Silicon House is a fully accredited .IN registrar
2. Silicon House is ranked as a TOP PERFORMING REGISTRAR by NIXI

On High Availability Solutions side, we have been building bare metal servers or dedicated servers, clusters, cloud servers, hybrid servers, global load balancers for more than Two Decades in India. We are the first company in India to build Fully Automated Virtual Data Center spanning three Continents.

Our High Availability Configurations with Global Load Balancing are time tested and has been used by many of the very successful start ups around the world