

# STUDY ON SOLUTION WEB HOSTING SELECTION : OUTSOURCING OR IN-HOUSE

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## ABSTRACT

Penetration of Development of website very fast, this thing is visible from height of request of domain in Indonesia, many companies and institution of business builds web site. Many solution to comparing of solution web hosting also becomes special notice, level of reliability a website hardly depended from install of website. Solution which can be applied is Outsourcing ( web hosting, co-locations) or in house which self configure. Every choice has excess and insufficiency. In this research explained about excess and insufficiency from every solution which applicable to guarantee website built with high reliability.

**Keywords:** Web Hosting, Co-locations, Performances Web

## 1 INTRODUCTION

Internet development nowadays has really changed the pattern of business strategy and method of marketing. With the development of web 2.0 method, many marketers use internet as one way to develop product selling or company's service. Today, website and email has been a common stuff for a business company, where email as a fast and cheap communication media and website as information source which is faster and cheaper than using conventional advertisement media. According to data from APJII (*Assosiasi Penyelenggara Jasa Internet Indonesia*, an Indonesian Internet Service Provider Association) the Internet user in Indonesia increase so fast in number, as well as the proposal to rename domain ccTLD (country code Top Level Domain) Indonesia to PANDI (Pengelola Nama Domain Indonesia) in certain domain name.

Since 2007 PANDI has handled ccTLD in Indonesia, from other information source, from first Quarter in 2008, almost 1000 domain naming \*.id

requested monthly. According to [www.detik.com](http://www.detik.com) [8] until the end of May 2008, based on PANDI's statistic counting, there were 28.184 domain names using \*.id. they consist of **14.692 domain co.id, 6.185 domain web.id, 3.002 domain or.id, 108 domain ac.id, 1405 domain sch.id, 269 domain net.id, 1.521 domain go.id, 36 domain mil.id**. In addition, There is incredible of each month development for gTLD domain like \*. com . net, Bizz, org, and so forth.

This prove that if Web site, Domain and other things connected to the internet has become a need for every business company and institution. Moreover, now many telco providers offer their new products with competitive price but fast access. The bandwidth development is also has reach a point where an internet bandwidth is no longer expensive, thus, the contents that can pass in that network increasing very high. This can be seen from the development and the number web-based 2.0 contents.

More than 40% of corporate websites suffer "miserable" uptime performance, and more than 70% of UK government website do not offer a high enough level of availability, according to research by broadband testing labs for network monitoring firm my web alert [2]

When we talk about a web, we will talk about Hosting, too. Choosing a Hosting is also a critical factor to a business company or institution who prefer web sites as their media for information update. When a website is done, it needs a System called Web Server. Server computer are specially optimized for network use, with large memory and disk-storage capacity, high-speed communications capabilities, and powerful CPUs. Powerful workstation are being further customized as Web Server for maintaining and managing web site [12].

The web hosting industry continues to grow and become more sophisticated to meet the need of organizations utilizing web hosting services. The industry itself can be divided into several distinct

categories based on the types of clients they serve. Hosting can be categorized broadly into personal, small to mid-size business web hosting [11].

However, there are many ways to publish a website, commonly by hiring a web hosting provider service, until developing one's own web server. In the other hand, web hosting providers also offer many solutions like web hosting, co-locations, etc.

Web hosting firm have seen growing demand for services ranging from simple shared hosting and collocation to managed hosting, virtualization and cloud computing companies benefiting from the trend include digital reality trust, equinix, internal dan savvis- all of which reported revenue increase in the first quarter 2009 [9]

It often happens that choosing a solution on how to publish a web in Internet become so confusing. This study can be an initial thought and clear description about the services to choose to solve a web publishing problem.

## 2 ANALYSIS

In comparing service to use, there are some criteria as the main issues, as described below.

### 2.1 USA Server Service Package

If the web will be accessed by users from abroad, choosing a server in USA is a correct decision. The main advantage of USA server is on their economical price due to cheaper rent price there. But the disadvantage of it is that Indonesian user need bandwidth to international stage and longer access time because it should pass some routers to reach its destination. Thus, if the backbone to international stage have problems, the web will be inaccessible.

Because longer routing hop is needed, the latency problem effect make website access a bit slower because of additional time is needed to handshake client and server.

### 2.2 Local Server Service Package

If the website will be accessed by local (Indonesian) only, the right choice is to use local server service package. The provider commonly put their server in interconnection IIX / Open IXP/ INIX, because the interconnect IIX will interconnect all routing from all service provider in Indonesia country. The local price offered is more expensive than the USA's price since renting price for rack or co-location at cyber building Jakarta, where

interconnection IIX is located is very high. But, the latency and access time of local server to user is better in speed due to shorter hop.

### 2.3 Windows /Linux-based Package

Many webmasters or web developers use certain softwares to help their work like as Frontpages products from Microsoft, or Script with ASP v3, ASP.Net, VB.Net, which components or extensions has special standard that is only able to run perfectly in a Server which Operating System (OS) is Windows-based and its IIS is also Windows.

This Operating System is not an open source, yet a licensed one. That's why Windows-based service is expensive. This make rent price for hosting in Windows server tend to be more expensive than Linux, which is open source. This also added by the use certain Control Panel that is Windows-based required.

Meanwhile, Linux Server Service Package is a standard for most webmasters that use PHP, MYSQL, Apache, SSL, and etc. Their service is usually cheaper due to OS and daemons used here is Open source. Not all hosting service provider use Windows server.

### 2.4 Power Depend on Hardware

Handshake Process between browser client and server will occur when communication process run, server will serve all clients' request. Imagine if web built is a portal, news content, or e-commerce, the hit to this server must be high, seen from the resources used as processor, harddisk rotation, power supply, memory access, input-output data flow from ethernet, etc.

Many vendors give solution for hardware server problem. There's nothing wrong to use PC as Server, known as PC Server but in its characteristics, built up server is arranged to work in high performance and guarantee services.

### 2.5 Internet Bandwidth Connection

Bandwidth is needed so that the web server can be accessed from Internet. "Bandwidth is not Free", the larger we rent the more expensive we pay. It's better to connect the server to Internet by using "*Dedicated Connection*", because a connection reliable is needed when request occurs from internet.

### 2.6 Control Panel (Cpanel)

We can find various Cpanel existed in the market with certain characteristics, yet their main function is as GUI / Interface between server machine and admin. Admin can easily do maintenance like create direktory, rename, delete, set the access rights, chmod, create user, delete user, setting FTP, subdomain, and others without any need to give direct command to SSH login.

However, vunerability Cpanel is often exploited by hacker, so Cpanel applied also becomes attention at the time of will choose

**locations.** The main advantage is the access to the service is not bothered eventhough access to the tenant has some problems.

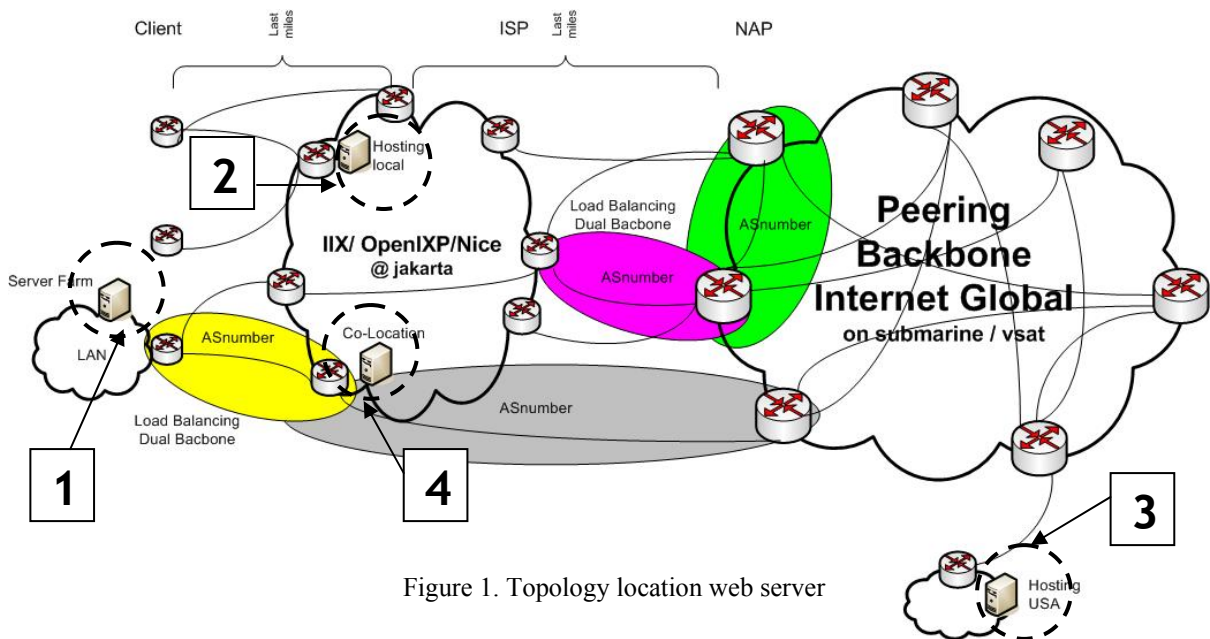


Figure 1. Topology location web server

### 2.7 Co-Locations

There are some advantages obtained if a company, institution, or provider do co-locations, as ;

1. They don't have to worry about the ability of Lastmiles (last connection) from provider to client's CPE.
2. If we put server service (web, mail, FTP, etc) at **insources** posititon (fig.1, **mark 1**), the main advantage is the last access to the server; if last miles meet a problem then access to the server will also have problem, or if the site infratructure affects, as power supply availability, and the size of its bandwidth.
  - a. What shown in figure 1 **mark 2** can also be a solution, where server is located beside NOC ISP or internet provider rented or renting hosting/space in server provider or **co-**
  - b. If we put the server service or we rent quota **hosting** at foreign server (fig. 1 **mark 3** above), the main disadvantage is if there's request to the server from user in Indonesia, it needs bandwidth for abroad and if there are problems on backbone connection internet global to offshore. Nevertheless, this solution is very good one if the access for the web comes from users all over the world.
3. While, the advantage if the server is put in interconnection IIX on figure 1 **mark 4** is that the access will not be disturbed although the last miles access is being disturbed. The server can be put on either provider connected directly to IIX. Even, it is better if co-location where the server located is directly at cyber building in Jakarta. The main benefit for this is that the access will not be disturbed although our

connection is disturbed and the routing is shorter to destined server.

- Because the server is put in the interconnection IIX, data package hop will be shorter and affect on making data transfer from source to destination faster. It help saving the use of international bandwidth and support development of various new service/content like games, mobile applications, etc. It also role as backup access if ISP / provider has trouble to international connection

## 2.8 Comparison

There are some factors considered for comparing and choosing Outsourcers or In-house; supporting devices need, Access speed, Network Management, Price Estimation, and Reliability

Table 1. Web Hosting

Factor	Hosing
Supporting devices need	Renting service provider which is affected by: <ul style="list-style-type: none"> <li>The amount of quota space</li> <li>The number of bandwidth transfer</li> <li>The number of user account</li> <li>Location, in USA Server or Local Server IIX.</li> </ul>
Access speed	Influencing factor <ul style="list-style-type: none"> <li>situation of Server in USA / IIX</li> <li>Bandwidth provided</li> <li>because in character share, sometimes access experiences resistance</li> <li>hardly depended from specification hardware</li> </ul>
Network Management	<ul style="list-style-type: none"> <li>doesn't require special configuration</li> <li>hardly hinging with service provider in optimalized and configuration maintenance server</li> <li>limited access right for example some service provider doesn't provide logins SSH.</li> </ul>
Price Estimation	<ul style="list-style-type: none"> <li>tends to cheap expense of month, because doesn't require special hardware</li> <li>the price of determined by quota and election of server in USA / IIX</li> </ul>
Reliability	<ul style="list-style-type: none"> <li>very Irrespective of service provider, some Cases frequently server down, either due failure hardware or because factor cyber other crime.</li> <li>SLA UPTIME 92% / month</li> </ul>

Table 2. Co-Location

Factor	Co-Location
Supporting devices need	Locates resources hardware in NOC Provider. <ul style="list-style-type: none"> <li>Special server, rack mount / blade / tower</li> <li>ip address public provided by provider</li> <li>bandwidth share with certain amount, for example share 128 Kbps to International and 1 Mbps to IIX.</li> <li>problem backs up power supply to follow from solution of service provider.</li> </ul>
Access speed	Affected by : <ul style="list-style-type: none"> <li>Server Specification</li> <li>Bandwidth provided, ever greater of bandwidth increasingly good</li> <li>access only be applied for web thus would more optimal</li> </ul>
Network Management	<ul style="list-style-type: none"> <li>access right in remote full</li> <li>cannot enter and changes hardware server without special sign in NOC service provider</li> <li>requires special maintenance for example update</li> <li>requires special Human Resources</li> <li>Safe, because placed in room specially is taken care of 24 hours with CCTV , which is not of all people can step into the space</li> <li>a few constraints at the time of need to restart server or Upgrade certain equipment.</li> </ul>
Price Estimation	<ul style="list-style-type: none"> <li>tends to expensive, because rent expenses month of bandwidth, electrics, physical security and safety, location in private space</li> </ul>
Reliability	<ul style="list-style-type: none"> <li>highest reliable because server to have the character of dedicated and not in share with other service.</li> <li>SLA UPTIME 99.9% / month</li> </ul>

Table 3. Build Own / In-house

Factor	Build Own
Supporting devices need	<ul style="list-style-type: none"> <li>• Locates server in local DMZ of our network.</li> <li>• requires Last mile which is reliable from server to service provider</li> <li>• special server, rack mount / blade / tower</li> <li>• IP address public allocation from local network</li> <li>• Power supply and backs up must be good</li> </ul>
Access speed	<p>Influencing factor</p> <ul style="list-style-type: none"> <li>• Server Specifications</li> <li>• The bandwidth, tends to bandwidth in share with usage in local network</li> <li>• imagined if bandwidth rented 256 Kbps, while accessing to the server average of in 1 minute around 100 hits, hence access will bottleneck.</li> </ul>
Network Management	<ul style="list-style-type: none"> <li>• full access either in remote access or access in hardware because our own space server</li> <li>• requires special maintenance ( electrical problem, UPS, FIREWALL, and others) is tending to expensive of its cost</li> <li>• there is no problem at the time of replacement / upgrade of server because server at our placed.</li> <li>• requires special Skill employee</li> </ul>
Price Estimation	<ul style="list-style-type: none"> <li>• cheap, problem last mile, electrical supply, bandwidth and access right otherwise resided in private place.</li> <li>• there is no fee of month</li> </ul>
Reliability	<ul style="list-style-type: none"> <li>• Unable to rely on, because hardly depended from many factors</li> <li>• SLA UPTIME 75% / month</li> </ul>

### 3 RESULT

- Level of reliability a website hardly depended from election of web server
- There is many advantage and disadvantage from each system outsourcing or in-house
- Main advantage from Web hosting is inexistence of expense of maintenance server, doesn't require of network management which is complicated, while the negative is hardly depend on service provider
- Main advantage from Co-location is can control server fully, but rent expenses the negative in NOC Provider

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