

ISPA Guidelines and Recommendations on Broadband Terminology

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1. Introduction

The Internet Service Providers' Association (ISPA) has identified a need to develop a set of guidelines and recommendations relating to the meaning of broadband terminology. ISPA's Code of Conduct working group was tasked with developing an initial set of guidelines and recommendations for further discussion, and this document is the result.

The objective of this document is to help to kickstart the process of establishing a shared understanding between ISPs, consumers, IT journalists and advertising authorities in interpreting words like "uncapped", "shaped" and the like when these are used to advertise or describe broadband services. ISPA strongly believes that this will be to the benefit of both ISPA members and consumers of broadband services.

It should be noted that the Internet market tends to change reasonably rapidly. Some of these guidelines may need revision quite quickly, and other types of services are likely to emerge which do not fall neatly in the categories set out below. ISPA reserves the right to update this document as the need arises and in response to input received.

Please note:

- This document is not prescriptive and is not intended to be legally binding on ISPA members or to oblige ISPs to market their services in any specific manner.
- Neither is it intended to be used as definitive or regarded as an expert opinion in any legal or quasi-legal proceedings or to limit the ability of ISPs to create new services and categories of services.
- ISPA disclaims responsibility for any loss flowing from reliance on the contents of this document.

2. Basic principles

The most important principles for the provision and marketing of broadband services should be transparency and clear communication with current and potential customers.

The nature of the service that is being provided to the customer, any relevant restrictions on that service and the costs for the service should be clearly communicated to customers in any marketing material (where feasible given the advertising medium). Consumers should have sufficient information to make informed decisions about which service will best meet their needs and what that service will cost them.

An ISP's terms and conditions and/or an acceptable use policy must be readily available to customers and should be kept up-to-date if an ISP launches new products or services.

3. Guide to technical terms

This section contains a guide to the common technical terms used in connection with broadband:

3.1. Broadband

A broadband Internet access service is a service which provides access to the Internet with a minimum download speed of 256 kbps.

A service can be broadband regardless of the technology employed to provide the service, for example, DSL, wireless, wifi, cellular or satellite.

Note that the minimum speed referred to is linked to the minimum *download* speed - which may differ from the minimum *upload* speed – as services are generally marketed with reference to this download speed.

Because broadband speeds can vary according to a wide variety of factors, speeds are required to be marketed with reference to the maximum possible download speed, e.g. "Up to 4Mbs".

ISPA notes that the minimum speed chosen here is quite low. It has been chosen to match the definition in the Department of Communication's published National Broadband Policy¹ which is, in turn, based on the ITU's definition of broadband for developing markets. The accepted minimum speed of broadband services in many developed markets is much higher, and ISPA looks forward to being able to revise this number upwards in the future, as minimum South African broadband speeds increase.

3.2. Local and international

Local traffic is traffic originating on the network of a South African ISP which is destined for another South African IP network, and which will most likely be carried across interconnection links/Internet exchange points located in South Africa.

International traffic is traffic originating on the network of a South African ISP which is destined for an IP network located outside of the country (or vice versa), and which will most likely be carried across international Internet links.

It must be emphasised that these meanings reflect only how things work under normal circumstances. National traffic may be routed internationally under certain circumstances, for example, as an alternative if a particular carrier service is down.

Largely for historical reasons, South African ISPs have sometimes differentiated between "local" access, which generally means access to other South Africa networks, and "international" access, which generally means access to networks outside of the country. Similarly, "local traffic" generally means Internet Protocol ("IP") traffic destined for (or coming from) local IP networks, and "international traffic" generally means IP traffic destined for (or coming from) international IP networks.

¹ <http://www.info.gov.za/view/DownloadFileAction?id=127922>

However, upon closer inspection "local" versus "international" is slightly more complicated than this on a technical level, and depends to some extent on the technical configuration of an ISP's network, and on that ISP's connections to other ISPs. To illustrate this, consider the example of an ISP ("ISP X") which connects to "ISP Y" via the Johannesburg Internet exchange (JINX), but doesn't have a direct peering agreement with "ISP Z". Traffic between the networks of ISPs "X" and "Z" may therefore pass over international links before arriving back on the target network. A pertinent question is thus: Would this traffic be considered international or local?

Adding to the local vs. international complexity is the fact that traffic routes are not static, and may change based on network congestion, link failures and network traffic patterns. Hence, on occasion, "local" traffic might transit international links, even though it would typically travel across a local interconnection link.

3.3. Traffic shaping

Traffic shaping is the deliberate limitation or prioritisation of some types of Internet traffic or certain Internet protocols over others.

It should be noted that traffic shaping can be implemented either to provide a customer with a specific type of service (for example, by providing a service which specifically prioritises services used for online gaming or to penalise a customer (for example, by limiting peer-to-peer traffic protocols for users who have exceeded the terms of acceptable use). Traffic shaping is sometimes referred to as "traffic prioritisation", usually when it is being implemented on the customer's request.

Traffic shaping is usually aimed at giving priority to web browsing, email services and normal downloading via web browsers and lower priority to bandwidth intense applications such as peer to peer applications. Traffic shaping is used as a means of managing a network, keeping the cost of the service under control and of preventing a small number of customers from placing a disproportionate burden on the network or negatively affecting the overall user experience on the network.

3.4. Contention ratio

The contention ratio of an Internet access service means the total capacity sold to customers versus the total capacity the service provider has provisioned to service those customers.

In general terms "contention ratio" is used as an indication of the total capacity (or bandwidth or traffic) an ISP sells to its customers, versus the total upstream capacity (or bandwidth or traffic) an ISP has available to service those customers. For example, if an ISP sells 100 users a 1 Mbps service (total sold = 100 Mbps) and provisions 5 Mbps to service these customers, then the contention ratio would be 20:1. Note that this doesn't mean that each user only gets 1/20th of the total 5 Mbps, because not all customers use the service at the same time. ISPs also use caching servers and bandwidth optimisation technologies to optimise shared usage of upstream links.

Different services on an ISP's network may also have different contention ratios. An ISP might have a 10:1 contention ratio for capped DSL services, but a 30:1 contention ratio for uncapped DSL services. There could be different contention ratios for uploads and downloads. Different parts of an ISP's network might also have different contention ratios. One contention ratio might measure the total capacity into an upstream provider's DSL cloud versus the total capacity of DSL services the ISP has sold to those customers, but a different contention ratio might measure the amount of international capacity available to those same customers.

In summary, "contention ratio" can mean a number of different things, depending on the context, and the figure presented can be very difficult to verify. The usefulness of this term for consumers is therefore debatable.

3.5. Family friendly services

A family friendly Internet access service is one where the ISP provides the customer with a filtered access service, or the ability to set-up filters on the content or types of content available to that customer. Such services restrict the customer's access to content which is deemed undesirable for children, and may offer other filtering options.

ISPA's Code of Conduct requires that all members make information on protecting children available to their customers. Some ISPs go further than this, offering access services where specific content is filtered or blocked.

ISPs offering "family friendly" services should specify what sort of content filtering or blocking is implemented for customers of that service and should clearly indicate any limitations on the effectiveness of the filters.

4. Types of broadband service

This document divides broadband services into four categories, as follows:

- Unrestricted, uncapped Internet access: No cap. Acceptable use policy may only restrict illegal activity, not usage behaviour. May be linked to a specific access speed.
- Uncapped Internet access: No cap. Acceptable use policy can place limitations on user behaviour and define "abuse" criteria which can result in service restrictions. May be linked to a specific access speed.
- Soft capped Internet access: Service is provided on a metered basis. After the customer exceeds a "soft cap", they still have Internet access, but significant restrictions are applied, such as limited international access or vastly reduced access speeds
- Hard capped Internet access: Service is provided on a metered basis (limited traffic volume, or limited amount of time online). After the customer exceeds this cap, no access to the Internet is provided until the customer purchases additional services.

These four types of service are defined in more detail below. Please note that ISPA recognises that other types of services may be offered and that ISPA members are in no manner required to divide up their services in this manner.

ISPA wishes to emphasise that the above characterisation is intended as a guide to understanding broad categories of service and it

- is not a requirement for ISPA members to use these categories
- does not mean that the use of terms set out in this section in marketing material should be interpreted in accordance with this section.

4.1. Unrestricted, uncapped Internet access

Characteristics of an "unrestricted, uncapped" Internet access service are as follows:

- There is no limit placed on the total volume of traffic the customers uploads or downloads.
- The service may still be linked to a specific speed (e.g. a 512 kbps unrestricted, uncapped service, or a 4 Mbps download/1 Mbps upload unrestricted, uncapped service).
- The Acceptable Use Policy for unrestricted services may not place any restrictions on the customer's usage behaviour, but may still place restrictions on illegal or unlawful use of the service (the ISP has no discretion in this regard).
- Traffic-shaping may be implemented on an unrestricted, uncapped service. The general shaping policy to be applied to the service should be clearly disclosed.

4.2. Uncapped Internet access

Characteristics of an "uncapped" Internet access service are as follows:

- There is no limit placed on the total volume of traffic the customers uploads or downloads.
- The service may still be linked to a specific speed (e.g. a 512 kbps, uncapped service, or a 4 Mbps download/1 Mbps upload uncapped service).
- The Acceptable Use Policy for uncapped services may place additional restrictions on the customer's usage behaviour beyond illegal or unlawful usage. Customers not adhering to the AUP may have their services limited or soft capped. Details of usage restrictions and the consequences of breaching these restrictions must be clearly set-out in the AUP.
- Traffic-shaping may be implemented on an uncapped service. The general shaping policy to be applied to the service should be clearly disclosed.

4.3. Capped Internet access: Soft cap

Characteristics of a soft capped Internet access service are as follows:

- The access service is provided on a metered basis. Usually this means that the customer purchases a limited volume of traffic (typically per month) but it could also mean that the customer has purchased access for a limited amount of time.
- After the customer exceeds this limit -- referred to as the "soft cap" -- their Internet access service has certain restrictions applied to it. Restrictions might include limited international access/only local access, or vastly reduced speeds. The up-front

description of the service provided to the customer should specify what limitations will apply to the service once the soft cap is reached.

- In most cases the "soft cap" resets at the end of the metering period, for example at the end of each calendar month.
- Traffic-shaping may be implemented on a soft-capped service. The general shaping policy to be applied to the service should be clearly disclosed.

4.4. Capped Internet access: Hard cap

Characteristics of an Internet access service which only has a hard cap are as follows:

- The access service is provided on a metered basis. Usually this means that the customer purchases a limited volume of traffic (typically per month) but it could also mean that the customer has purchased access for a limited amount of time.
- After the customer exceeds this limit -- referred to as the "hard cap" -- their Internet access service is terminated. To regain access, the customer must purchase additional services from the ISP. Note that some providers may allow access to a limited number of sites after the hard cap has been reached.
- Traffic-shaping may be implemented on a capped service. The details of the services and/or protocols which are prioritised or limited must be clearly disclosed up front.

4.5. Mixed services

Some ISPs offer services which are a mixture of the above four. For example, an ISP might provide a service which is "uncapped" during the day but becomes "unrestricted, uncapped" at night. In these cases, ISPs should clearly specify the time period that each type of service applies.

5. Recommendations for ISPA members

The following general recommendations are made to help ISPA members to promote consistency in the use of broadband terms:

- Ensure that "broadband" is only used in your advertising to refer to services which have a minimum download speed of 256 kbps.
- If you (or your upstream service provider) do any sort of traffic shaping, ensure that this is made clear to potential customers before concluding a service agreement.
- Your acceptable use policy should clearly address:
 - (a) any restrictions on illegal or unlawful use of the service, and under what circumstances you will take action in the event of allegations of illegal or unlawful use of the service, and
 - (b) any other restrictions based on the customer's usage pattern or behaviour, and the consequences of breaching those restrictions.
- For usage-based services, the ability for the customer to monitor their usage should be readily available. Customers should preferably be provided with the option of receiving notifications of their usage at certain points, for example once they reach 75% of their cap.

- For capped services, a customer should not be automatically switched to a more expensive traffic-based charging scheme once they have exceeded their specified cap. Consent should be obtained from the customer before moving them to any other charging scheme.
- Pricing for uncapped services should clearly indicate whether the cost is:
 - (a) flat rate, i.e. a single price for an "all you can eat" service; or
 - (b) metered, i.e. the cost of the service is linked to utilisation.
- Information about the contention ratio for the service provided should be made available on your web site.
- If you are providing family friendly services, you should provide information about the filtering or blocking you do, and indicate any limitations on the effectiveness of those filters or blocks.

The following recommendations relate to the categories of services defined in this document:

- Use the term "unrestricted" or "unrestricted, uncapped" Internet access to refer only to a service which has no limit placed on the total volume of traffic uploaded or downloaded by the customer, and which does not place any other restrictions on the customer's usage behaviour (excepting illegal or unlawful use).
- Use the term "uncapped" Internet access to refer only to a service which has no limit placed on the total volume of traffic uploaded or downloaded by the customer subject to the customer observing specified usage restrictions.
- For services which offer different performance criteria during different times of the day, the time periods that apply in each case must be made clear to the customer.

6. Commenting on this document

This is a discussion document, and comment from ISPA members (and other interested parties) is actively solicited. Please send any comments you have to secretariat@ispa.org.za.

7. Contributors

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