

Characterization of Internet Exchange Points by Using Quantitative Data

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Abstract : Reliable data transport over the Internet is one of the goals of researchers in the field of computer science. Data such as videos and audio files are becoming increasingly large. As a result, transporting them over the Internet is becoming difficult. Therefore, it has been important to establish a method to locally interconnect autonomous systems (AS) with each other to facilitate traffic exchange. It is in this context that Internet Exchange Points (IXPs) are set up to facilitate local and even regional traffic. They are now the lifeblood of the Internet. Therefore, it is important to think about the factors that can characterize IXPs. However, other more quantifiable characteristics can help determine the quality of an IXP. In addition, these characteristics may allow ISPs to have a clearer view of the exchange node and may also convince other networks to connect to an IXP. To that end, we define five new IXP characteristics: the attraction rate (τ_{attr}); and the peering rate (τ_{peer}); the target rate of an IXP (Obj_{att}); the number of IXP links (N_{link}); the resistance rate τ_{e} and the attraction failure rate (τ_{\square}).

Keywords : characteristic, autonomous system, internet service provider, internet exchange point, rate

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