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Green computing interchange Switching function

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Abstract— This research is about a method for enabling user of a computing system to measure and compare the green efficiency of a set of resources used for computing task. With the use of these information, the user can select a desired set of resources to employ in the computing task to minimize the environmental impact of computing task in relation to requirement. In some embodiments, the idea create metric for measuring the greenness of a computing task. The metric is calculated through analysis of the resource computation, energy consumption, consequences of computation, and dimensional characteristic of a computing task. The metric could be beneficial or other metric that permit the user or a processing system to make scheduling and execute decisions.

I. INTRODUCTION

Green computing which also means “green technology”, is totally environmental responsible use of computers . It basically aims to reduce the resources consumed and the complete disposal of the e-waste (electronic waste).It is a very innovative and an conservative idea which is a combination of the technology and the ecology and now-a-days most companies are paying more attention to how they can go “green” with their products and how it can benefit the customers or the general public. The basic concept behind green computing is that it covers a wide range of methods, which include the energy saving methodology. It basically innovate the way to utilize all the earth’s natural resources conservatively or not to damage them or exploit these resources. It’s basic focus is on the serving their products with an idea of reducing all the environmental issues like pollution, by discovering new technologies and more environmental and recyclable products. So, green computing is now a boom market which is growing day by day and is coming up with more and more innovative ideas which help the user also and their main focusing is just on the environment. By serving us with eco-friendly products .

II. BACKGROUND OR THE IDEA BEHIND GREEN COMPUTING

This idea comes up with the good cause and the government themselves play a vital role in this. Like Environmental Protection Agency(EPA) launched the “energy star” program in the 90s, to promote energy efficient methods .The EPA today still plays an important role and active participate by providing not only the energy effective methods but also the cost effective methods for the consumers , and comes up with the best technologies which are totally based on the green technology. Though EPA is a recognizable agency, they are not the only ones who promotes new ways of going green in the technical terms. Some other organizations like European Union and TCO certification are one of the leading groups in green computing.

III. BENEFITS OF GREEN COMPUTING

It’s ever growing and rapid growth of technologies and innovations brings forth many methods on how can it will have good or a positive impact, along with the benefits that it provides. It has benefited not only the consumer but also it provides global benefit. It reduces energy demands, waste, and money of how we use the technology for the good cause which does not have a negative effect on the environment and our costs. Some of methods are like turning off your computers during the night . For ex :- A computer which is used for “24 hours in a day will cost up to $125-170 in annual electric costs and produce 1,756 pounds of CO2 in the air” .
So by turning off your computer during the nights , you can save up to “67 percent annually
in your electric bill”, along with the reduction in the greenhouse gases. So , overall the main benefits are that it will result in saving money , reducing the cost factor, and conserving the energy along with helping the environment .Comparatively it is also used in improving the energy efficiency. In Europe and many other places we have a voluntary initiative which aims at reducing the environmental impact of the various data centers by using more green technology. Service providers battle to reduce carbon footprint as the various data centers expand as very few businesses have set themselves targets to boos energy efficiency levels and another example is GE which has one of the first data centre in the world to be awarded as the leadership in Energy and Environmental Design (LEED) Platinum Certification. This award is presented by the US green building council for IT projects that go beyond standing codes, and in order to achieve a “go green” motto by the implementation of the green technology and in order to create energy efficient buildings. Now talking about implementing Green IT in general, there are ways and means to conserve energy and thereby reducing the ill-effects on environment.

1) A little care while using our PC: We needlessly leave our personal computers on even if we’re not using them, unaware that it still uses electricity and heats up which requires additional cooling. In an enterprise the cost of electricity for hundred such computers becomes enormous. Alternately, we

can use the power saving methods like sleep mode, hibernation, and standby when computers aren't being used.

2) Screensavers: Blank screensavers reduce power consumption as compared to moving ones.

3) Another famous concept is that of The 3 R's of going Green: Reuse- Instead of throwing away old computer/parts we might reuse them or give them to someone who needs it. This will not only help that person but also reduce landfills which cause environmental hazards. Replace: Instead of buying a new computer altogether we can replace the old parts with new ones or buy refurbished hardware. This also helps in capital management as buying a new computer would be more expensive than buying individual parts. Recycle: Sometimes computer parts are beyond repair and need to be recycled. If we don't recycle them, they end up as e-waste. If we don't discard them properly, the harmful chemicals/metals in them (like lead, mercury, chromium) might pollute water.

IV. WHY TO CHOOSE GREEN COMPUTING?

So, now it is clear that basically green computing is based on the green technology concept. It includes the best practices of the energy efficient central processing units like CPU, Peripherals and servers. It also meant for improving the disposal of electronic waste(e-waste).As it also offers network managers by cost reduction and operational benefits. So, reducing your CO2 emissions and taming energy efficiency. The answer is what is being described as Green IT. Now, to understand what Green IT is, one can say that it refers to incorporating the "GO GREEN" slogan in the IT industry. Green IT can also be referred to as "Green Computing". It basically refers to the process of practicing environment friendly computing .This methodology is adopted in order to ensure that the usage of energy is done efficiently, to promote the idea of recycling of waste products and focuses on the green concept of serving the environment with the best and environmental friendly products around the world which are only meant to serve the environment with the best without exploiting the use of the natural resources or without harming the environment. Businesses around the world have realized the importance of securing environment and how beneficial it can prove for consumer. As a result to this organizations have started taking active part in addressing the environmental related issues. Businesses implement Green IT to reduce power consumption and thus lowering costs. Common people implement Green IT in order to sustain a healthy lifestyle. Data centres are an integral part of any IT firm. They are of upmost importance because they're the central repository where the data of any given organization is stored. Not just that, it also emits a large amount of CO2 gas in the environment.

However, the problem is actually greater than the growth in power consumption by data centres. Much of the electricity that comes through the power cord of the computer is turned into heat and power conversion waste through the PC power supply. In order to encourage these good practices of conserving energy government has started to certify the data centres as Green. Computers run on electricity which is produced by burning coal/oil. This process releases Co2, sulphur, methane and other such gases (termed as greenhouse gases) into the atmosphere. These greenhouse gases accumulate and result in Global Warming and other harmful environmental issues. They also cause respiratory diseases, acid rains etc causing a greater harm to the human body. Another factor that is a major cause of concern to the environment is the disposal of computer peripherals like monitors which end up polluting land and water. So, in that case also this concept of green computing came into effect. That's why this concept of green computing came into action. By helping the environment the all what we need is to get aware and make others force too. So, that each and every issues related to the environment is solved as e-computing technology is growing but there are still some of the drawbacks of this technology. As everything which has an advantage will also have some of the disadvantages also .

V. DRAWBACKS OF THIS TECHNOLOGY

As it is well said that " Like the coin has two faces one head and one tail " so despite of having so much of advantages or benefits of green computing there are some of the drawbacks also. But the thing is what are those where we lack in just fulfilling the e-computing concept. So the drawbacks are as follows:-

- Costly:- As we have the idea , since this technology has came into force but the thing is the technology is new , so the cost factor is the general cost as these products are generally more costlier.
- Underpowered:- Since , this technology is new so it is underpowered.
- Still in experimental stages and need to develop:- As it is a last project so still yet is not as much popular as any other. Still need for gaining the popularity and creating awareness among the people.
- Rapid technology changes which hence lead to lack of the development of this technology:-Since the technology is changing and improving day by day .so whenever they came up with eco friendly products ,till then some new technologies came into field again in those products ,so again they have to work on the same product which lead their production a little slow in the market.
- Not readily available:- Since it is completely a new concept so these products are not easily available or not so popular products so that's why they need some time to get stable in the market and hence need to grow and discover new ideas and concept. So these all are the basic drawbacks which are still the companies have to suffer from.

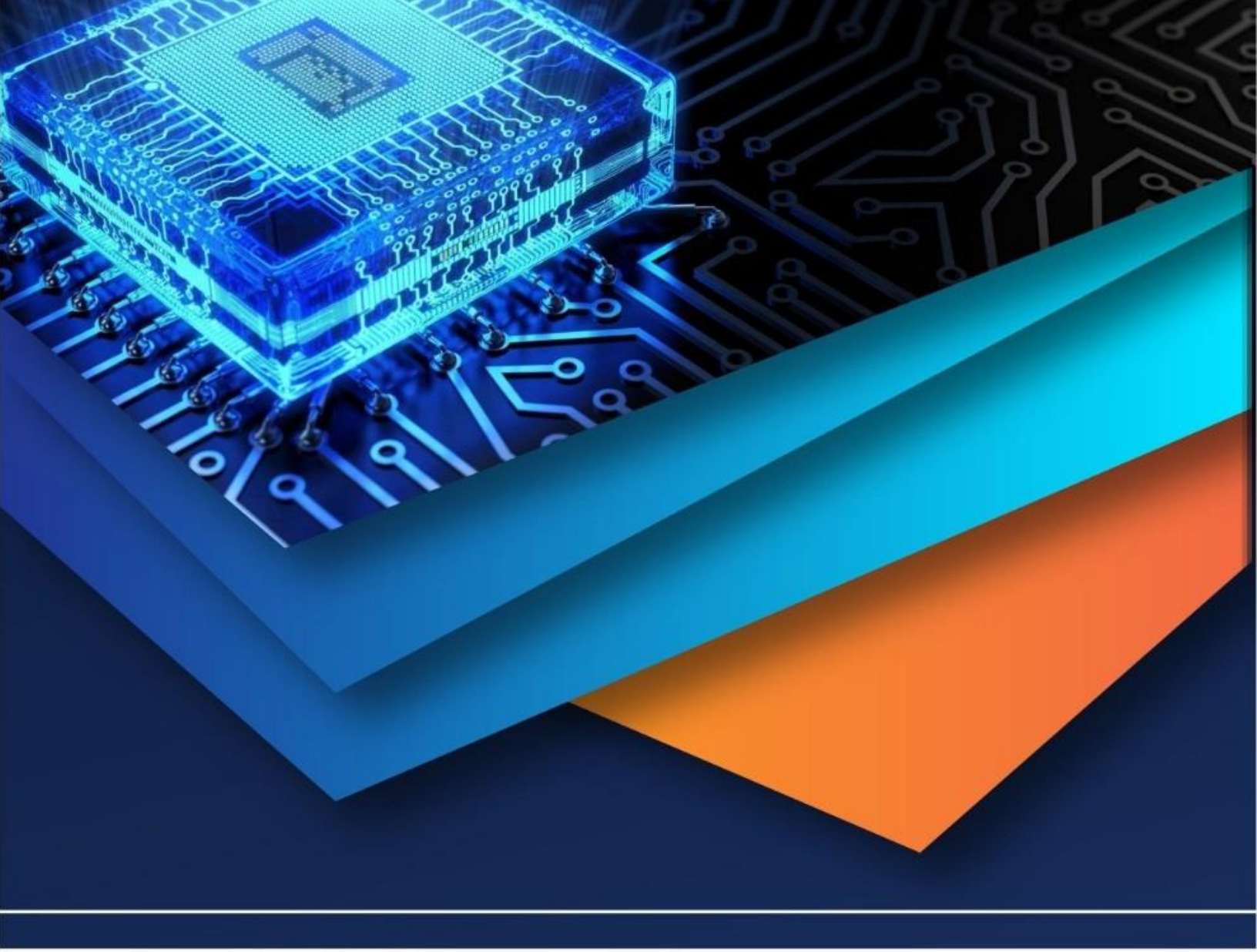
VI. CONCLUSION

Green IT is continuously interesting people and organizations all over the world, the main reason being greater financial returns on the investment made on green data center. Green IT has gained a lot of importance because of the rising energy costs and its impact on the environment. Therefore, the need to manufacture and store energy has increased mainly due to the volume of systems that the organizations generally rely on. The power consumption by companies is a very critical issue. The idea of using green computing is beneficial as it helps the companies to dispose their electronic waste in an effective way so that the environment is not hampered. This is also done in order to help reduce the CO2 emissions from data

centers that are responsible for global damage. Green Computing with respect to data centers leads a lot of cost savings over time. Reduction in energy costs from servers, cooling and lightning helps any organization saves a lot on their budget on power.

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