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## **Innovative Technology of Network Operating System**

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### **Section 1: About Applied Electronics Corporation & GRAND BERRY**

First of all, I'd like to talk to you about our corporation. Our businesses are the sales of manufacture and production of new operating system based on Linux for commercial use. Our corporation established on more than 20 years ago, however just 2 years has passed since we established as operating system manufacturer. We have some famous software engineers in the world. And we receive an evaluation as an operating system manufacturer of next generation network system in Japan.

Last year we released new operating system for business which was named "GRAND BERRY". This operating system is developed especially for thin client, and it is highly keeping connectivity with major communication corporations in Japan. And also it is correspondence to major VPN systems such as F5 Networks, Juniper Networks, Cisco Systems and more. "GRAND BERRY" has general versatility for all customers because it is able to embed

into USB memory device, Cellular phone, MicroSD card, data communication card and more, so it is the best operating system for mobile thin client.

## Section 2: Various Problems to Solve

Well, right now there are many problems and issues at the time of global computing. Let's move on the first issue.

The first thing is the information leakage. According to Japan Network Security Association, in 2007, the cases of personal information leakage occurred about 1,000 times and 30 million people were leaked by these troubles. And also corporations paid about 23 hundred billion in compensation.

The second thing is troubles of the virus and spam mails by crackers. According to Japan Data Communications Association, measures to junk and spam mails will take 830 billion JPY for a year, and also damages of the production took 730 billion JPY.

The third thing is, especially in Japan, promotion of telework. It is getting more important, so preparing security, convenience and cost reduction are issues for telework. And then, for a solution of them, concentration of data administration and its cost are coming to the main theme.

In addition, we have to think about Green IT. CO2 reduction is main theme on preservation of environment in the world.

### Section 3: Usage of GRAND BERRY on Thin Client

Now, I'd like to talk to you about thin client for solution of these problems, and what is benefit for thin client with using GRAND BERRY.

Well, usually, all information, data and files are stored on the hard disk in your PC. In thin client, these things are never stored in your PC, and you can communicate between you and the center server by the internet, and make processing and store all information, data, files and applications in the terminal server such a system calls thin client.

For example, when the USB memory device which is embedded "GRAND BERRY" is inserted to the PC, it boots the PC without hard disk. It accesses to the terminal server through the internet using a VPN circuit and the communication card. The user operates the PC in front of his eyes, but actually he is operating the only his desktop on the terminal server by remote control. If you go to business trip with having this USB memory device, you can access to the terminal server in your corporation with using it. At the time, any data of record are never stored in local PC. In addition, we are going to make a special type of thin client PC with embedded "GRAND BERRY" into MicroSD.

### Section 4: Solutions of GRAND BERRY

The next point is how thin client with using "GRAND BERRY" make solutions for the problems.

For information leakage, your data and records is never stored in local PC and smart phone, so if you lost your PC or you were stolen your PC by someone, it do not cause information leakage. USB memory device with fingerprint or cipher authentication is helpful for information security.

In measure to cracker, GRAND BERRY is protected from any viruses because it is a kind of embedded Linux. Even if you use old PC which has virus, GRAND BERRY will protect the computer from virus because it does not access to the hard disc.

In order to promote teleworking, mobile thin client by GRAND BERRY is perfect to use! If one who works for only one hour per a day in call center, manager has to ensure more than actual his/her time and salary, and also place an office. That is very useless. However, telework by mobile thin client makes solution for these problems. If the equipment of terminal server becomes widely use in major public corporations and organizations, it will be soon to spread thin client from company to consumer.

Consumer-electronics makers announced Green IT which is for reduction of CO2 by each method. Utilization rate of used PCs is increased by using GRAND BERRY from 3 ideas; recycle, reuse and reduce. For example, it is ordinary that there is a lot of kind of PCs which is difference manufacture, production date and type in a big corporation. If you intend to unify the system of networking and thin client in your company and subsidiaries including foreign firms, you will boot various PCs by GRAND BERRY which

has world-class versatility about VPN systems as well as configuration of huge terminal server.

## Section 5: Roadmap for GRAND BERRY

Finally, I'd like to talk you about the development roadmap of "GRAND BERRY".

In Japan, services of "download speed of 40Mbps" of broadband wireless LAN started from this month. In addition, four major mobile communication corporations in Japan will start services using LTE (Long Term Evolution) in 2010. As a result, wireless LAN speed will realize to become broadband of "download speed of 100Mbps" as a nominal value. This speed is almost same as speed of wired broadband with optical fiber. And also if you compared with HSDPA system of present wireless broadband, this is speed-up more than 14 times. In addition, the usability of thin client will be expanded. So, GRAND BERRY is the best for thin client operating system with responding to hi-speed wireless broadband.

They say that thin client is weak in motion picture because transferring display images takes so long time. However, when LTE services will start, it will be easy to watch movie on thin client because display images will be transferred more smoothly. Thin client users never feel any stress and difference between using your PC in the office and using mobile PC in outside.

Our company will try not only correspondence to communication, but also uniting of IC card authentication and biometrics authentication, and improving security for remote desktop. "GRAND BERRY" can be prevention of the information leakage, and also people can work safety anywhere and anytime with using mobile one on thin client. This is the key of next generation network in Ubiquitous age.

In addition, we have some ideas that GPS function combines into USB memory device for where user is, and also IC tip combines into it for payment as electronic money. I think our products and technology will be useful for video-on-demand. It will be to be realized. You never worry about leakage of contents of motion picture, and it will be possible to network delivery services of movie contents. So, our engineers are always trying to evolve our product "GRAND BERRY" for variety services.