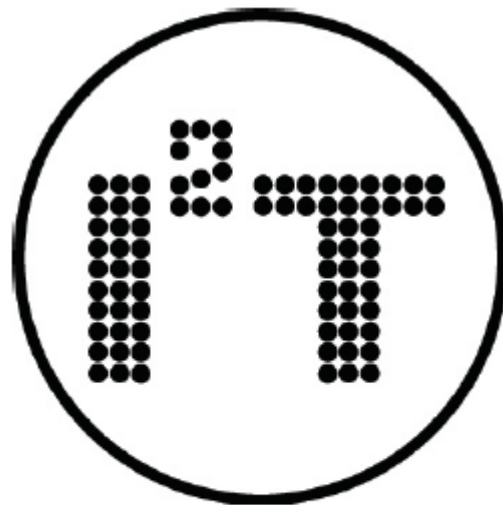


**International Scientific – Practical Conference
«INNOVATIVE INFORMATION
TECHNOLOGIES»**



**PART 3
INNOVATIVE INFORMATION TECHNOLOGIES
IN INDUSTRY AND SOCIAL-ECONOMIC SPHERE**

**Prague – 2014
April 21-25**

K 32.97
UDC 681.3; 681.5
I 64

I 64 Innovative Information Technologies: Materials of the International scientific – practical conference. Part 3. /Ed. Uvaysov S. U.–M.: HSE, 2014, 596 p.

ISSN 2303-9728

The materials of The Third International Scientific – Practical Conference is presented below. The Conference reflects the modern state of innovation in education, science, industry and social-economic sphere, from the standpoint of introducing new information technologies.

Digest of Conference materials is presented in 3 parts. It is interesting for a wide range of researchers, teachers, graduate students and professionals in the field of innovation and information technologies.

The editorial board:

A.Abrameshin, S.Aldoshin, A.Bugaev, E.Chemisina, Yu.Evtushenko, I.Frumin, L.Gamza, J.Halik, I.Ivanov (executive editor), M.Kagan, B.Katalinic, V. Klaban, G.Kuzhev, J.Kokes, V.Maslov (scientific editor) E.Pozhidaev, J.Prachar, G.Savin, L.Schoor, A.Schmid, P.Skalicky, V.Tihomirov, A. Tikhonov (scientific editor), S.Uvaysov (under the general editorship), V.Vasiliev, L.Verbickaya, A.Zhizhchenko

ISSN 2303-9728

LBC 32.97
© The conference organizing committee
© HSE, 2014

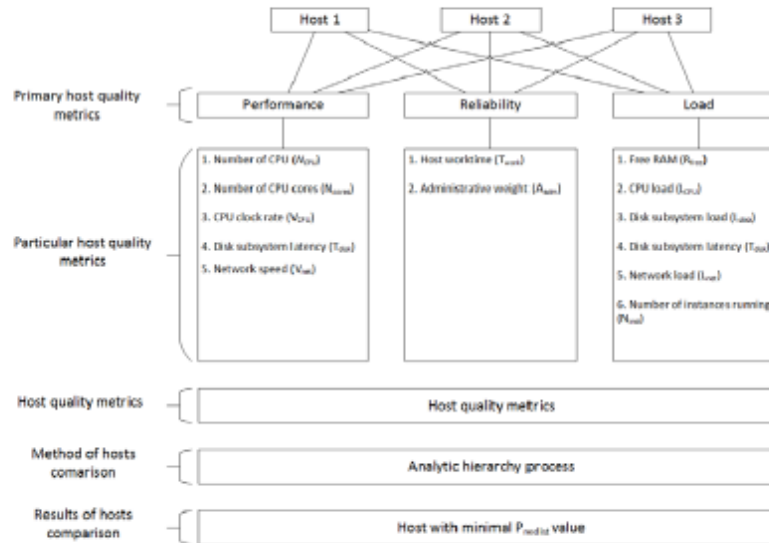


Figure 3. Finding the host with the minimal $P_{predist}$ (phase 4)

Because quality metrics of each host change in time, the analytic hierarchy process makes it possible to select the best location of an instance during its start. Thus, the proposed solution will help improve the efficiency of resource allocation and its further utilization increasing effective capacity of the cloud. Moreover, the problem of provisioning applications with big differences in systems requirements will be solved due to using zones. The method also makes it possible to significantly reduce the volume of further resource reallocation, lowering the expense of computational resource for this process.

References

1. « Oblachnye vychisleniya » – http://ru.wikipedia.org/wiki/Облачные_вычисления
2. Saati T. Prinjatje reshenij. Metod analiza ierarhij. - M.: Radio i svjaz', 1993. -320 c.
3. Khantimirov R.I. Intellektual'noe planirovanie resursov v oblachnykh sredakh na osnove modeli «Infrastruktura kak servis» // Sbornik trudov molodezhnoj konferentsii «Informacionno-kommunikatsionnye tekhnologii v ekonomike», g. Moskva, 2013
4. Anokhin A. M. i dr. Metody opredeleniya koeffitsientov vazhnosti kriteriev // Avtomatika i telemekhanika. - 1997. - №8. - p. 3 - 35.
5. Mikhalevich M. V. Zamechaniya k diskussii Dzh. Dayera i T. Saati // Kibernetika i sistemnyy analiz. - 1994. -№1. - p. 97 - 102.
6. Mikryukov A.A., Knyazev A.A. Ob odnom metode resheniya zadachi mnogokriterial'nogo vybora // Sbornik trudov II mezhdunarodnoj nauchno-prakticheskoy konferentsii «Informacionnye tekhnologii v obrazovanii, nauke i proizvodstve», g. Serpukhov, 2009, p. 241-243

INTRA-SYSTEM EMC: STATE, PROBLEMS AND TRENDS

Kechiev, L.

Moscow State Institute of Electronics and Mathematics Higher School of Economics

Intra-system EMC evolution problems, new high speed and high sensibility systems trends are considered. General problems solutions are considered. EMC specialists training need is pointed.

Keywords: electromagnetic compatibility, electronic equipment, shielding, signal integrity.

Different system interaction is one of the most interest technical problems, because current electronics development process makes more new tools application result dependencies on its interaction conditions.

At early electronics evolution stages interaction tasks solved generally by circuit design improvements and frequency band planning. At present time individual measures are insufficient and it is system level problem. EMC requirements must be taken into account at all stages of telecomm and electronic equipment live cycle. We must not divide equipment design problems from its compliance supply problem at service stage. If we ignore EMC problems until they leads to equipment interaction malfunction, then EMC requirements providence will be costly and unsatisfactory.

With high speed digital processing systems and methods development, intra-system design problems became actual. Background for this changed are mandatory EMC certification of electronic devices, high amount of newly designed electronics, increase of electronics performance. All of that factors enhance EMC problems. Furthermore electromagnetic (EM) environment has changed in modern world. The most power RF interferences sources are : nuclear air burst EM pulse, lightnings, geomagnetic storms, high voltage (HV) power lines, railways, HV equipment, power RF transmitters, radars, ultra wide band EM pulse sources, microwave transmitters.

For this environments the following intra-system EMC trends and problems may be pointed. It is need to analyse strong EMI sources to identify radiated EM fields strength. RFI and operating frequency band enhancement requires most adequate processes and equipment models in RF domain. These models must be suitable for design solution verification. It is need to develop special software for those factors evaluation as following: signal integrity, shields efficiency, shield interruption taking in account, EMI emission level, virtual certification tests etc.

It is need to review bachelors, masters and postgraduates training courses in field of radioelectronics design and technology and in other connected fields. It is need to include a number of inter-system EMC training courses. At present times EMC is included in some curriculum, but the most of time is dedicated to inter-system EMC problems. Because engineers intra-system EMC skills are insufficient, they seeks ways how to improve their EMC skills. New equipment EMC specification requires designers to consider intra-system EMC problems. Deadlines, functional safety and project costs depends on these problems solution. The functional safety problem became one of the most critical, for objects under EM emissions influence. This field solutions are now theoretically based.

Inter-system EMC becomes one of the bases in electronic equipment design, and the most important factor (excluding electrical safety) at production release stage. EMC Technical rules of Customs Union juridically bases EMC problems in Russian Federation, that requires more attention to intra-system EMC.

Materials of
the International Scientific - Practical Conference
INNOVATIVE INFORMATION TECHNOLOGIES
Part 3

Edited by S.U. Uvaysov;
Executive editor I.A. Ivanov

Printed in author's redaction

Computer layout:
S.S. Uvaysova, A.S. Uvaysova,
S.M.Lishov, R. Yu.Pashev, D.S.Panasik
Cover design: R. Yu.Pashev

Signed to print 08.04.1014
Format 60x84/16. Paper «Pioneer»
Conventional quires 2.3 Print run 500 copies Order № 51
HSE
109028, Moscow, B.Trehsvyatitelsky lane, 3.