SynQuacer™
Multi-core CPU and server

2017.09.26
Socionext Inc.
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Yasuo Nishiguchi, Ph.D, Chairman and CEO

1975  Joined Kyoto Ceramic Company (now Kyocera Corporation)
1999  President, Kyocera Corporation
2005  Chairman and CEO, Kyocera Corporation
2009  Ph.D, Management of Technology Graduate School of Policy and Management, Doshisha University
2015  Chairman and CEO, Socionext Inc.
SynQuacer™

- Portfolio
- CPU
- From IoT to Cloud
- IoT gateway
- Switch SoC
- Cloud Computing
- For scaling & throughput
- Example
Socionext’s Portfolio

Application

Core Technology

Imaging
- ISP
- Image Recognition
- 2D/3D Graphics Display Core
- Picture Quality Audio Quality
- High Compression Rate & Low-latency Codec
- High-speed Analog (SerDes/ADC/DAC)

Computing
- High-performance Processor
- Low Power LSI Design
- Large-scale & High-speed LSI Design
- High-performance Packaging
- Low Power CMOS RF Design

Networking

Networking

Service-Specific Services

IoT

Edge

Cloud

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CPU

Balance
1GHz core & bus

Connectivity
DDR4
PCI Express Gen2
Giga Ethernet

Low Power
< 5[W]/chip
From IoT ~ Cloud

Latency

Throughput

Scalable

IoT

Edge

Cloud

Copyright 2017
IoT gateway

Small signal, e.g. beacon to be processed by single core

Large size signal, e.g. video stream to be processed by multi core
Switch SoC

SynQuacer™ X powered by Socionext DDT (Direct Data Transaction)

Socionext proprietary high speed switching technology
Cloud computing

64 x CPU cards are connected through Socionext DDT

Socionext DDT (Direct Data Transaction)

Socionext proprietary high speed switching technology
For Scaling & Throughput

Over 3,000 server nodes’ connection

DDT-R (DDT-Revolution)

Socionext Switch for
>100PB data processing
Example-1 - Hadoop

- Hadoop 2.0
- Hadoop 1.2

Execution time (sec)

Data size (GB)

<3 hours for 10TB sorting
Parallel computing using multi-CPU is effective!!
Your reference CPU

SynQuacer™
1st choice of 64bit
ARM based multi-core
CPU

Copyright 2017
ARM Native Development Machine

SynQuacer™ inside Multi-core ARMv8 64bit Linux BSP (Linux Kernel, UEFI, Device Driver)