

The complexity and size of the world is growing.

As devices report new information our ability to analyze our world grows.

To scale an analysis of our complex world we must account for the unprecedented growth of data reporting from sensors.

The Internet of Things – IOT.

The IOT will continue to expand exponentially recording data exponentially, in amount and complexity.

The need to capture such data and scale the Analysis accordingly is a certainty, and an unprecedented OPPORTUNITY.

Our need to scale the analysis of such data from the IOT demands we scale the COLLECTION of data.

The complexity and size of COLLECTION of data must
Scale with the complexity of size of the Analysis.

A need exists to scale this COLLECTION for performance and throughput in near
REAL TIME as well as from STORE.

Systems which divide the data from IOT into partitioned subsets are desired.

Systems which PERFORM FAST and UNIFORMLY on such subsets are desired.

Such subsets can be managed with parallel methods, such as provided by an HPC
cluster.

COTS techniques for HPC efficient, cost effective and HIGHLY scalable for
performance and throughput

Parallel methods ALREADY exist and are optimal in the networks bringing IOT data
from devices.

An HPC cluster COLLECTING and CHARACTERIZING incoming data from IOT is
optimal for scaling the Analysis.

SUMMARY for the IOT:

DATA from the IOT for REAL WORLD ANALYSIS desired
Features:

Desire to SCALE the ANALYSIS ==>

Desire CHARACTERIZE the DATA ==>

Desire for near REAL TIME ==>

Desire for Fast Retrieval from STORE ==>

Desire for PARALLEL METHODS in ANALYSIS ==>

PALLALEL methods in networking ==>

EQUALS

PARALLEL methods in COLLECTION.

SITUATION:

HOW DO WE GET DATA FROM THE IOT INTO THE COMPUTE CLUSTER (FOR ANALYSIS) QUICKLY, EFFICIENTLY, and COST EFFECTIVLY?

SUCH THAT IT ALL SCALES (for performance and Throughput) GOING FORWARD INTO THE FUTURE?

SITUATION:

Methods which exist for data COLLECTION using highly specialized processing (FPGAs, symbiants in network routers, Device controller circuits, etc.) are COSTLY, COMPLEX and will not scale well in times coming.

No truly optimal method in scaling the COLLECTION of data from the IOT for performance and throughput exists using COTS methods in HPC.

OPPORTUNITY:

CREATE A Method (an algorithm) for data COLLECTION using COMMON OFF THE SHELF HPC COMPONENTS (Hardware and Software) WHICH COLLECTS DATA INTO A COMPUTE CLUSTER IN A COMPLETELY SCALE ABLE WAY (Scalable for performance and throughput)

Such Algorithm to scale within one HPC cluster data ingest node up to as many Data Ingest nodes as needed to handle ALL the network connected IOT data streams desired.

SOLUTION:

INTEGRAL ENGINEERING

- a) HAS the ALGORITHM
- b) HAS the SYSTEM DESIGN
- c) HAS the TEAM
- d) HAS the TALENT, EXPERIENCE, KNOWLEDGE
- e) HAS the CAN and WILL do ATTITUDE

TO DO THE JOB

FOR YOU!