

NIST Big Data Public Working Group

Overview of NIST Big Data Interoperability Framework Volume 8

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Presentation Overview

- Volume Presentation Outline
- Volume 1, Definitions (Nancy Grady, SAIC)
- Volume 2, BD Taxonomies (Nancy Grady, SAIC)
- Volume 3, Use Cases and General Requirements (Geoffrey Fox, Indiana University)
- Volume 6, Reference Architecture (David Boyd, InCadence Corp.)
- Volume 4, Security and Privacy (Arnab Roy, Fujitsu; Mark Underwood, AVP, Strategic Initiatives, Controls and Countermeasures)
- **Volume 8, Reference Architecture Interface (Gregor von Laszewski, Indiana University)**
- Reference Architecture Software Implementation Environment and Demonstration (Gregor von Laszewski, Indiana University)
- Volume 7, Standards Roadmap (Russell Reinsch, Center for Government Interoperability)
- Volume 9, Adoption and Modernization (Russell Reinsch, Center for Government Interoperability)

NBDIF Volume Overview

Vol. 1 BD Definitions
Defines common language

Vol. 2 BD Taxonomies
Hierarchy of NBDRA components

Vol. 3 Use Cases & Vol. 5 Arch Survey
Info gathered; requirements extracted

Vol. 6 NBDRA
Developed NBDRA

Vol.4 S&P
Interwoven topics of S&P examined

Vol. 7 Standards Roadmap
Examine standards wrt NBDRA

Vol. 8 NBDRA Interfaces
Implementation of NBDRA

Vol. 9 Adoption & Modernization



Volume Presentation Outline

- For each volume
 - Scope of the volume
 - Brief recap of version 1
 - Highlights of version 2 accomplishments
 - Summary of version 2 areas needing contributions
 - Topics that could be considered for version 3

Volume 8

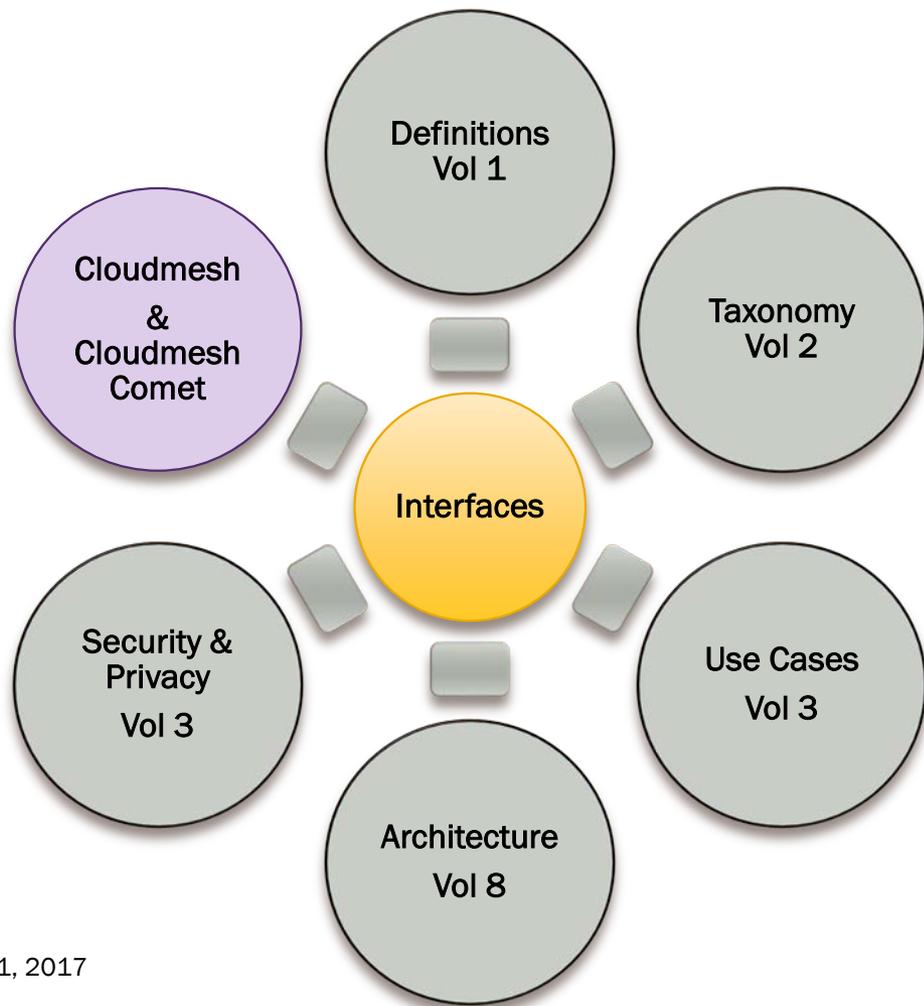
Acknowledgement

- NSF for support of Comet (SDSC, Indiana University)
 - Members of the NSF comet project
- NBDRA WG members
 - Tuesday meetings and discussions have considerably contributed to this effort
 - We still need to add your names ... please e-mail me at laszewski@gmail.com ...
- Prior effort conducted as part of cloudmesh at Indiana University

Volume 8 – Opportunities for Contribution

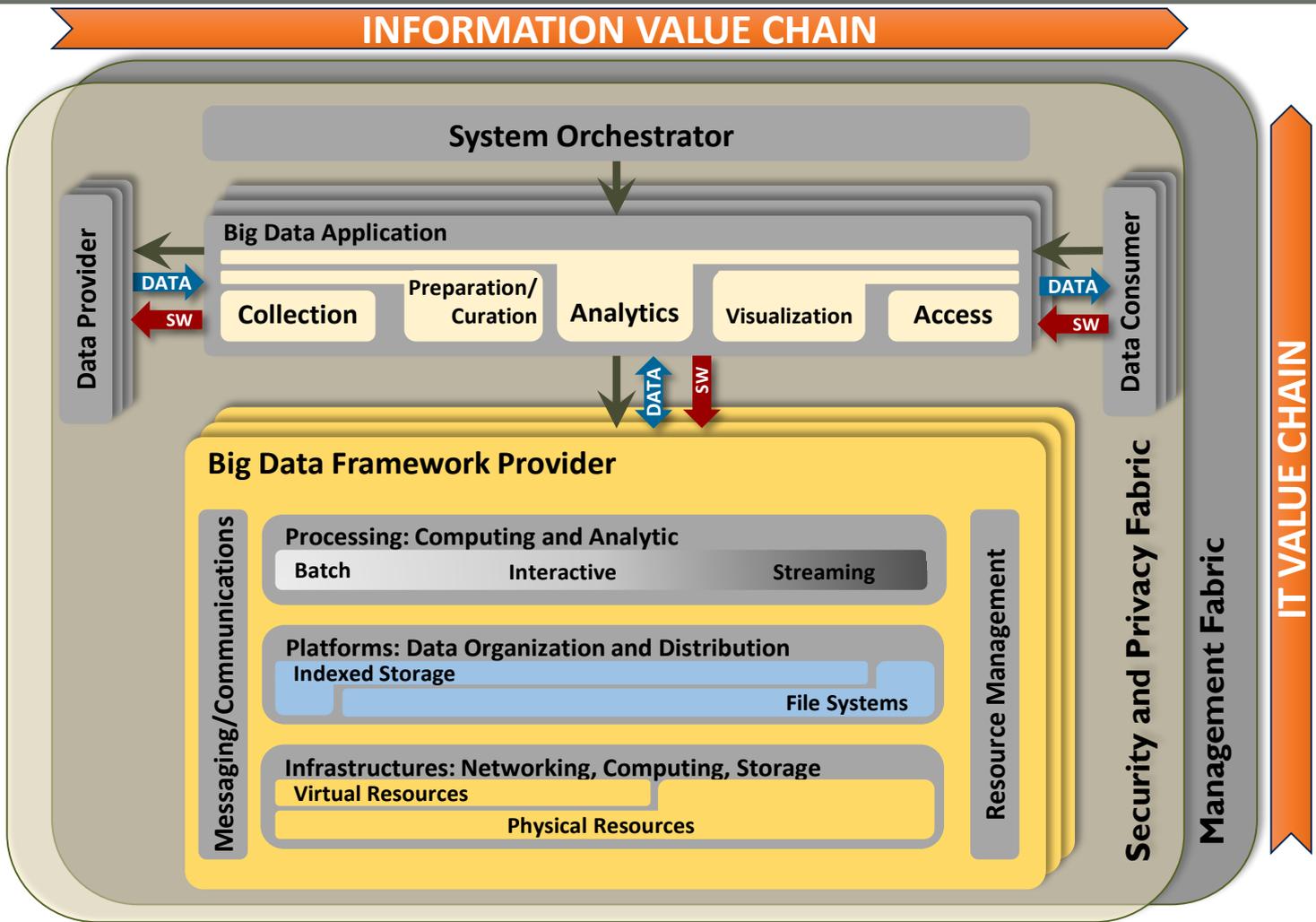
- **Volume 8 is in draft stage.**
 - We look for additional contributors to the volume 8
 - We want to keep the initial part of the draft as simple as possible and develop contributions based on ASCII text modifications.
 - Contributions can be conducted in multiple ways
 - A) Make modifications to the PDF document with PDF augmentation tools such as Adobe or Skim, send via e-mail.
 - B) Make modifications in ASCII while specifying the section you like to modify (section header, new paragraph, line numbers), send via e-mail.
 - C) Make modifications through git pull requests

Current Working Group Influences



- Working Group Volumes
- Cloudmesh
- Cloudmesh Comet @ SDSC/IU

Volume 6: NIST Big Data Reference Architecture



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Volume 8 – Document Scope

- **Established operational interfaces**
 - for management interactions and dataflow with needed resources between NBDRA components
- **Described and defined specific interfaces and the interactions**
 - between NBDRA components
- **Developed a set of interfaces defined through examples**
 - that can be used to create schema based definitions of objects that are manipulated through Big Data design patterns

Volume 8 – Possible Version 3 Topics

- **Formalization of the interfaces defined by example**
- **Validate the interfaces**
 - **Verifying select use cases**
 - **Working with domain experts**
 - to identify workflow and interactions among the NBDRA components and fabrics
 - **Exploring and modeling interactions**
 - within a small-scale, manageable, and well-defined confined environment
 - **Aggregating the common data workflow and interactions**
 - between NBDRA components and fabrics and package them into general interfaces.