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FOUNDATION

# Semantic Domain WG Weekly Meeting

13 October 2020

 THE **LINUX** FOUNDATION

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## Agenda

- › 1. Welcome (Paul—2.5 mins)
- › 2. Newcomer Introductions (Paul—2.5 mins)
- › 3. Task Force/Focus Group Updates (WG—5 mins)
- › 4. White paper proposal: *"How OCA Differs from JSON-LD and Why You Need Both"* (Paul—10 mins)
- › 5. Setting up an *OCA-CDISC Focus Group* for clinical research database model harmonization (Paul—10 mins)
- › 6. Demo: Dynamic data flow with explicit consent between two Hyperledger Aries agents (Robert—20 mins)
- › 7. Logistics and miscellaneous (Paul—10 mins)
  - › a. SDWG representative for the new Operations Team
  - › b. Leadership positions
  - › c. Meeting schedule

# Newcomer Introductions

## (30 seconds!)

1. Name
2. Location / time zone
3. Affiliation(s)
4. One-sentence summary of your interest in Semantics (or **one particular semantics-related** issue you personally want to see solved)

# Task Force/Focus Group Updates (5 mins)

- Imaging TF (Scott)
- Medical Information TF (Scott)
- ✓ FHIR-OCA Object Transformation FG (John/Mukund)
- Notice & Consent TF (Mark)

White paper proposal:  
*"How OCA Differs from JSON-LD and Why You Need Both"*  
(10 mins)

Discussion led by: P.Knowles

<https://oca.colossi.network> | <https://json-ld.org>

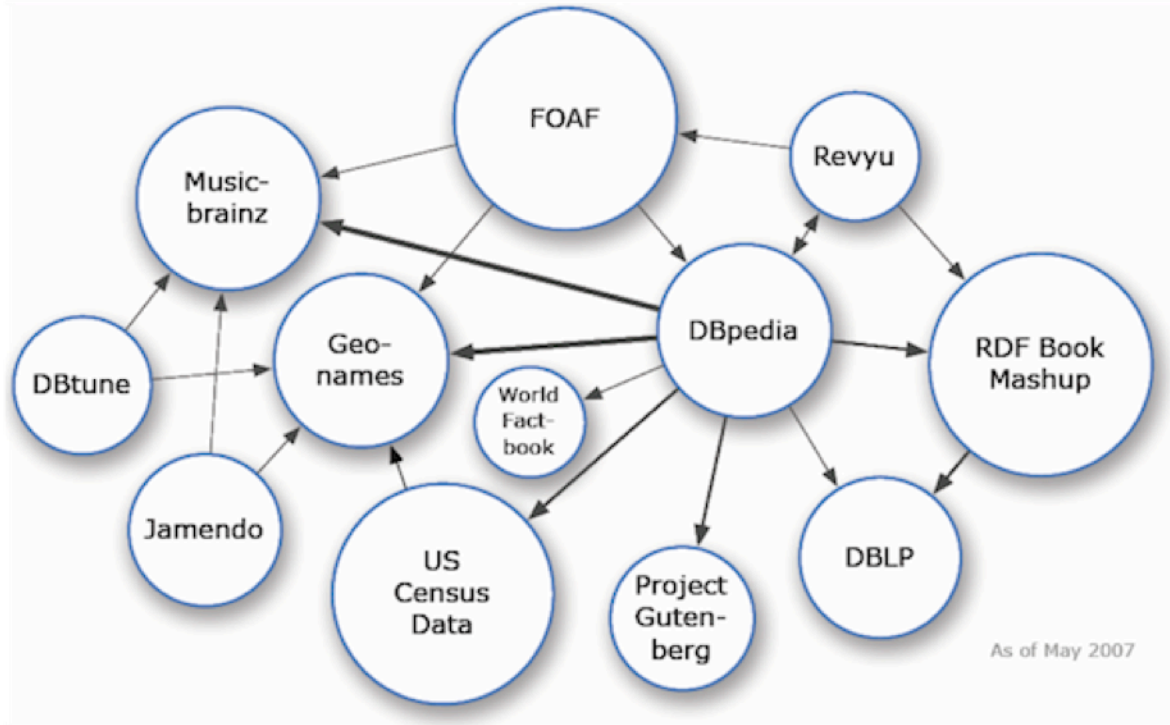
## What is Linked Data?

**Linked Data** is data expressed on a website that can traverse (via links) to other websites. Common formats of data include HTML, JSON, XML, CSV and RDFa.

These common data formats can be linked together using [JSON-LD](#)

Ref.: <https://json-ld.org>

# Linked Data



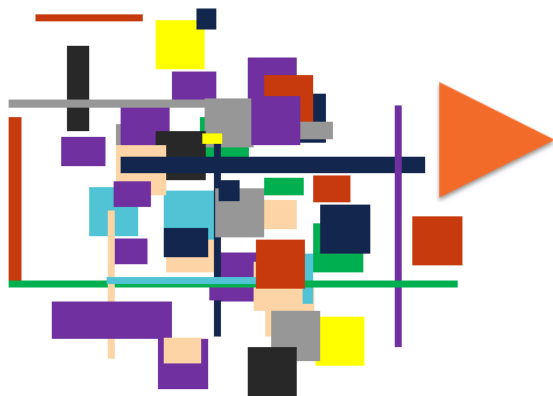
Linked Data



# JavaScript Object Notation for Linked Data (JSON-LD)

What does JSON-LD do?

**Unstructured Data**



**Structured Data**



“Data is messy and disconnected.  
JSON-LD organizes and connects it,  
creating a better Web.”

## What is a Database Model?

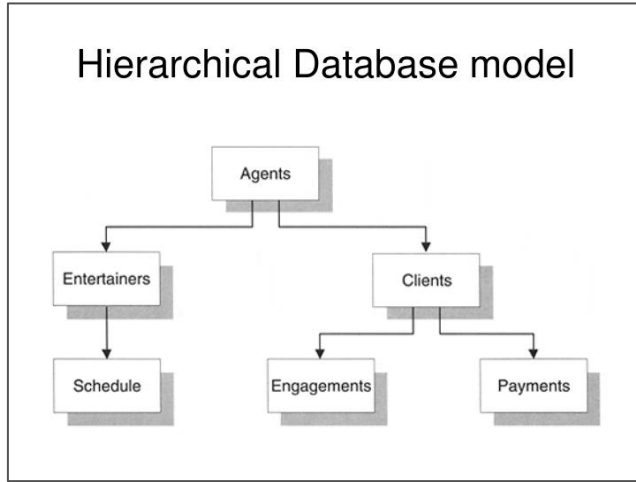
A **database model** shows the logical structure of a database, including the relationships and constraints that determine how data can be stored and accessed. Common kinds of data models include Hierarchical database model, Relational model, Network model, Object-oriented database model, Entity-relationship model, Document object model, Entity-attribute-value model, Star schema and Object-relational database model.

These common database models can be harmonized using [OCA](#)

Ref.: <https://oca.colossi.network>

# Types of Database Model

## - PART 1



Hierarchical database model

## Relational Model

Activity Code	Activity Name
23	Patching
24	Overlay
25	Crack Sealing

Key = 24

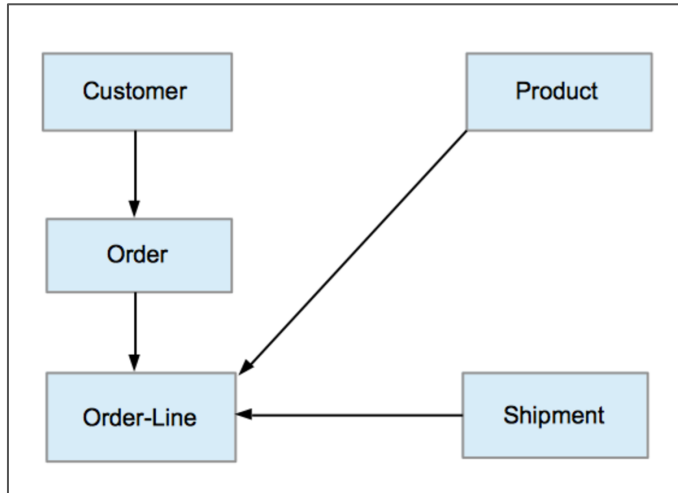
Activity Code	Date	Route No.
24	01/12/01	I-95
24	02/08/01	I-66

Date	Activity Code	Route No.
01/12/01	24	I-95
01/15/01	23	I-495
02/08/01	24	I-66

Relational model

# Types of Database Model

## - PART 2



Network model

## Object-Oriented Model

### Object 1: Maintenance Report

Date	
Activity Code	
Route No.	
Daily Production	
Equipment Hours	
Labor Hours	

### Object 1 Instance

01-12-01
24
I-95
2.5
6.0
6.0

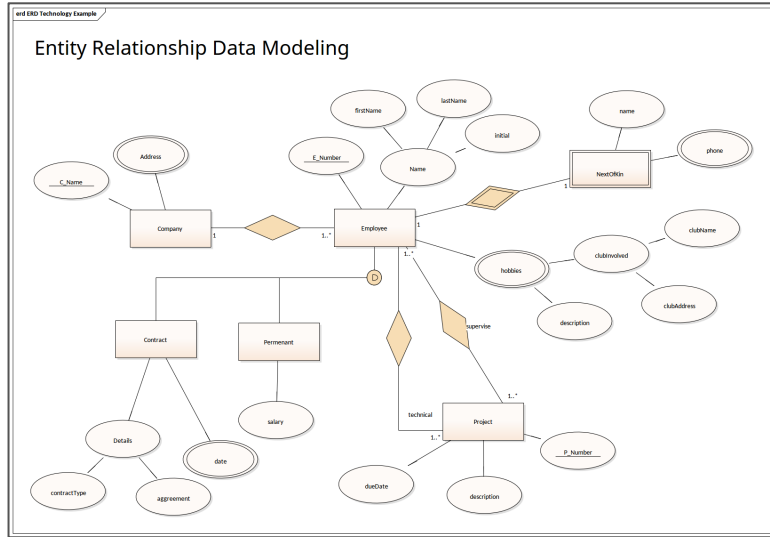
### Object 2: Maintenance Activity

Activity Code	
Activity Name	
Production Unit	
Average Daily Production Rate	

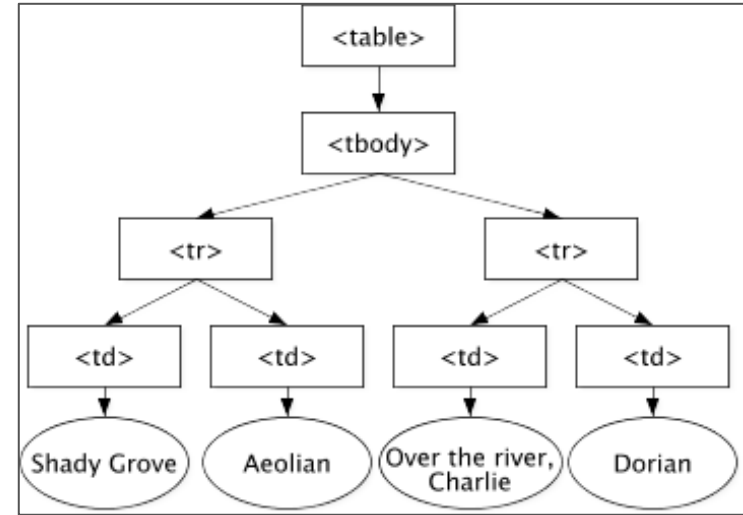
Object-oriented database model

# Types of Database Model

## - PART 3



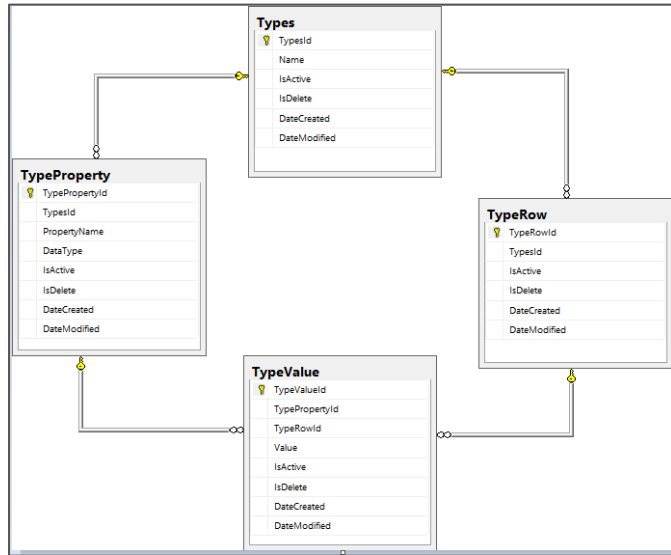
Entity-relationship model



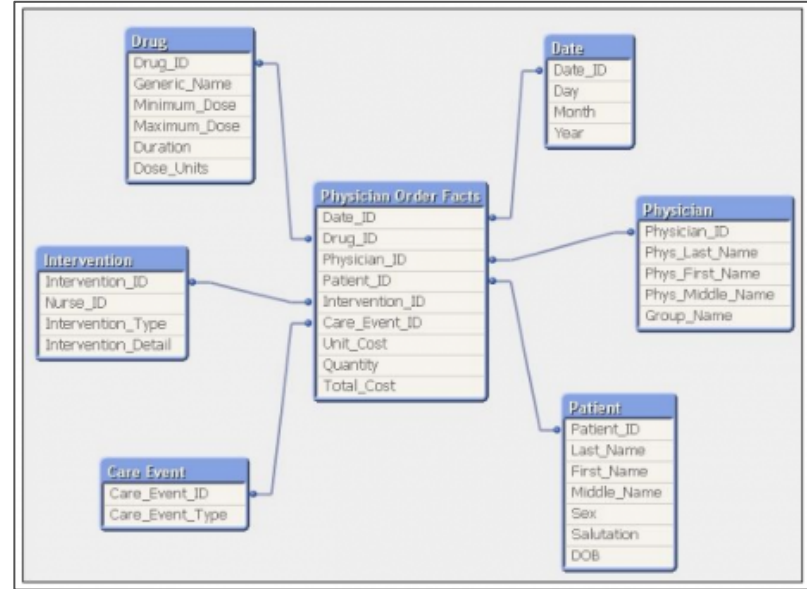
Document object model

# Types of Database Model

## - PART 4



Entity-attribute-value model



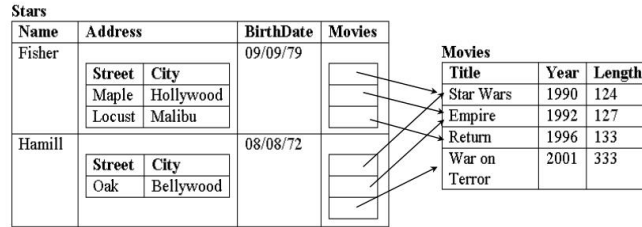
Star schema

# Types of Database Model

## - PART 5

### Object-Relational Design

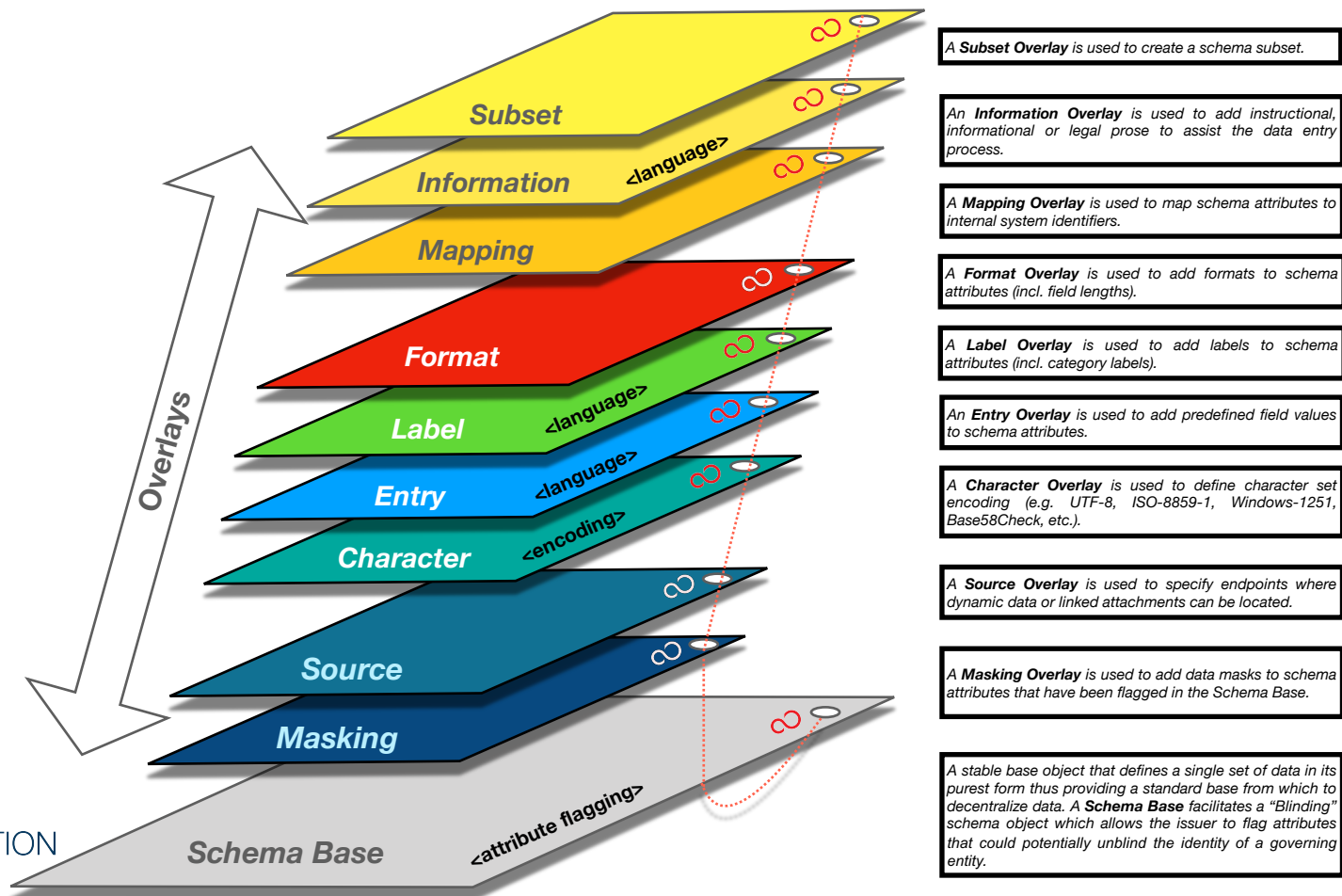
- Object-Relational Database



- An Object-Relational Query  
`Select s.name, s.address, s.movies`  
`From Stars s`
- Watch out for Object Sharing!

Object-relational database model

# Overlays Capture Architecture (OCA)





# Setting up an *OCA-CDISC Focus Group* for clinical research database model harmonization (10 mins)

Presented by: P.Knowles

<https://oca.colossi.network> | <https://www.cdisc.org>

## What is CDISC?



The **Clinical Data Interchange Standards Consortium (CDISC)** is a standards developing organization (SDO) dealing with medical research data linked with healthcare, to "enable information system interoperability to improve medical research and related areas of healthcare". The standards support medical research from protocol through analysis.

Ref.: <https://www.cdisc.org>

## CDASH

**CDASH** establishes a standard way to collect data consistently across studies and sponsors so that data collection formats and structures provide clear traceability of submission data into the Study Data Tabulation Model (SDTM), delivering more transparency to regulators and others who conduct data review.

Ref.: <https://www.cdisc.org>

## SDTM

**SDTM** provides a standard for organizing and formatting data to streamline processes in collection, management, analysis and reporting. Implementing SDTM supports data aggregation and warehousing; fosters mining and reuse; facilitates sharing; helps perform due diligence and other important data review activities; and improves the regulatory review and approval process. SDTM is also used in non-clinical data (SEND), medical devices and pharmacogenomics/genetics studies.

Ref.: <https://www.cdisc.org>

## ADaM

**ADaM** defines dataset and metadata standards that support:

- efficient generation, replication, and review of clinical trial statistical analyses, and
- traceability among analysis results, analysis data, and data represented in the Study Data Tabulation Model (SDTM).

Ref.: <https://www.cdisc.org>

# Demo: Dynamic data flow with explicit consent between two Hyperledger Aries agents (20 mins)

Demo by: R.Mitwicki

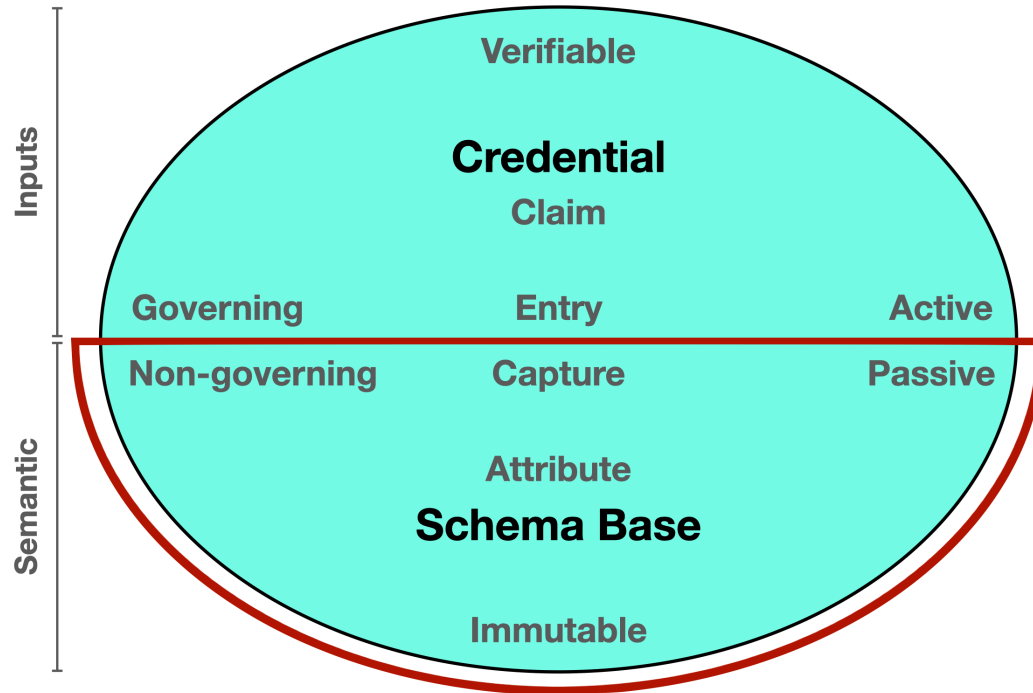
<https://sandbox-manager.argo.colossi.network>

# Logistics and miscellaneous (10 mins)

<https://wiki.trustoverip.org/display/HOME/2020-10-13+Weekly+Meeting>

## Semantic domain [passive]

*/ the meaning and use of what is put in, taken in, or operated on by any process or system.*



Ref.: <https://humancolossus.foundation/blog/active-and-passive-identifiers>



## DSWG representative for the new Operations Team

Request for a participant from the DSWG to put their name forward as a representative for the new **ToIP Operations Team**

The purpose of the Operations Team is to create a small group of ToIP members who will share information on the workplans of our WGs, help ensure that draft deliverables are advancing as intended through the stages of the ToIP workflow, resolve any bottlenecks that arise around decision-making/approvals and discuss issues such as (for example) introducing firmer parameters for the creation of Taskforces under all WGs.

The Operations Team will not be directing or otherwise interfering with the development of content and deliverables in the WGs themselves.

## Leadership positions

- › As a Working Group, we elect our own Chairs and Vice-chairs
  - › At least one, and up to three
  - › Two or three is recommended to spread out the load
- › We can periodically rotate chairs as needed
- › Volunteer via the meeting page at ...
  - › <https://wiki.trustoverip.org/display/HOME/2020-10-13+Weekly+Meeting>

## Meeting schedule

- › Call timing
  - › **ToIP Semantic Domain WG**  
Every Tuesday starting  
09:00 PT, 12:00 ET, 17:00 UK, 18:00 CET
- › Next meeting
  - › October 20th, 2020



# Closing Q & A

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