Electronic Data Collection at EIA

A synopsis of the first 10 months of planning and work in moving EIA to a cloud based data collection system

Federal CASIC Workshops
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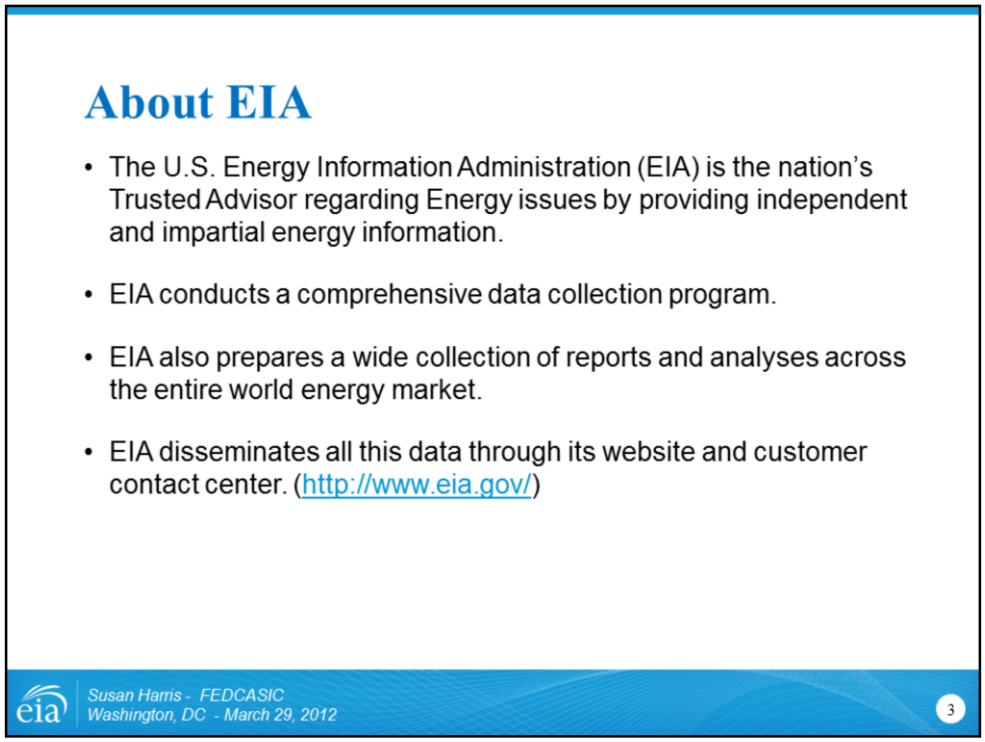
March 29, 2012 | Washington, DC

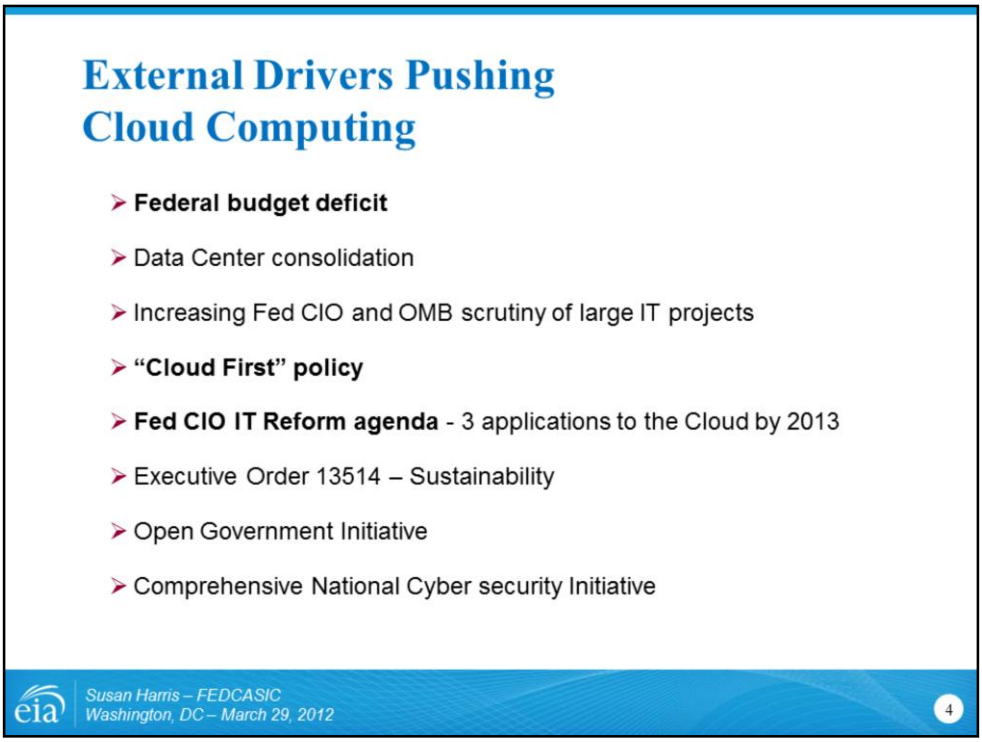


1. EIA is the independent statistical agency with the Depart of Energy. It is the nation's trusted advisor for energy statistics

2. EIA has a comprehensive data collection program. EIA collects energy data using approximately 60 forms which are administered to establishments working in the energy industry. Some of the establishments we collect data from include oil companies, refineries, natural gas companies, terminal operators, companies importing crude and products into the United States, coal companies, nuclear power plant operators, and renewable and alternative fuels production facilities.

3. EIA also prepares informative energy analyses, monthly short-term forecasts of energy market trends, and long-term U.S. and international energy outlooks.

4. Our primary method for disseminating our data is through our website but we have recently launched a Facebook page and we also use Twitter.



There are several external drivers pushing federal agencies towards cloud computing

1.Federal budget deficit --- budgets have been declining for several years

2.Cloud First --- This policy is intended to accelerate the pace at which the government will realize the value of cloud computing by requiring agencies to evaluate safe, secure cloud computing options before making any new investments.

The Federal Government's current Information Technology (IT) environment is characterized by low asset utilization, a fragmented demand for resources, duplicative systems, environments which are difficult to manage, and long procurement lead times.

3. Fed CIO IT Reform agenda --- Shift to "Cloud First" policy. Each agency will identify three "must move" services within three months, and move one of those services to the cloud within 12 month and the remaining two within 18 months.

Benefits of Cloud-Based Computing

Cost

Reduces IT capital spending

- Pay only for what you use
- Shift IT costs from expenditures to actual usage
- Significantly reduces lifecycle sustainment cost

Technology

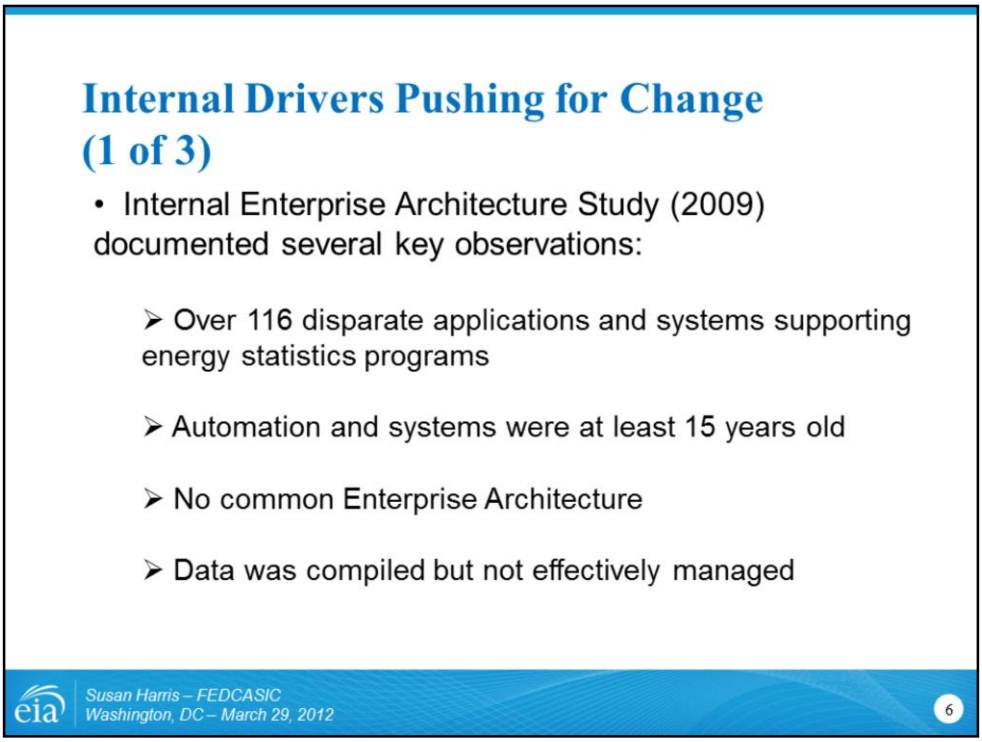
Increases flexibility and speed in IT implementations

- Scale up and down to meet immediate demands
- Real time deployment capabilities
- Improve COOP and disaster recovery operation capabilities

Mission

Allows Efficient use of resources

- Allocate resources to mission-critical activities as IT requirements are reduced
- Aligning to OMB practices
- Responding in a timely manner to federal mandates and agency requirements



In 2009, an Enterprise Segment Architecture Study was conducted that documented the systems and applications used throughout EIA in support of survey collection, processing, reporting and publication

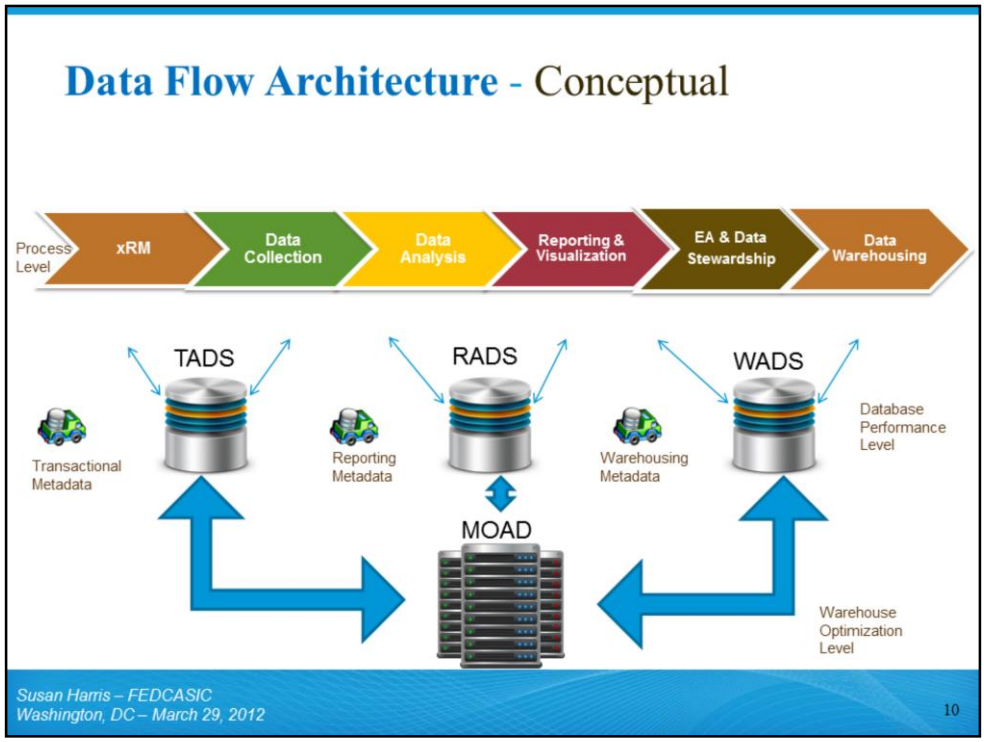
Internal Drivers Pushing for Change (2 of 3)

- …Key Observations (cont'd)
  - ➢Data Governance was non-existent
  - ➢ Silo-Centric Systems – Limited interoperability and communication between programs, processes and systems
  - ➢ IT Services Model not in alignment with Program and Business Strategies
  - ➢ Cost of managing hardware (number of servers) and licenses (core vs. socket) in coordination with the software upgrades was difficult and expensive

Internal Drivers Pushing for Change (3 of 3)

- In 2011, EIA reorganized from a fuel-based organizational structure to a function-based structure (e.g. centralized data collection support)
- Significant budget cuts in 2010 and 2011 resulted in a significant reduction in contractor resources needed to support the 116+ systems
- Knowledge transfer was identified as a key risk to the aging workforce

A smart way to move production systems to a more modern architecture …

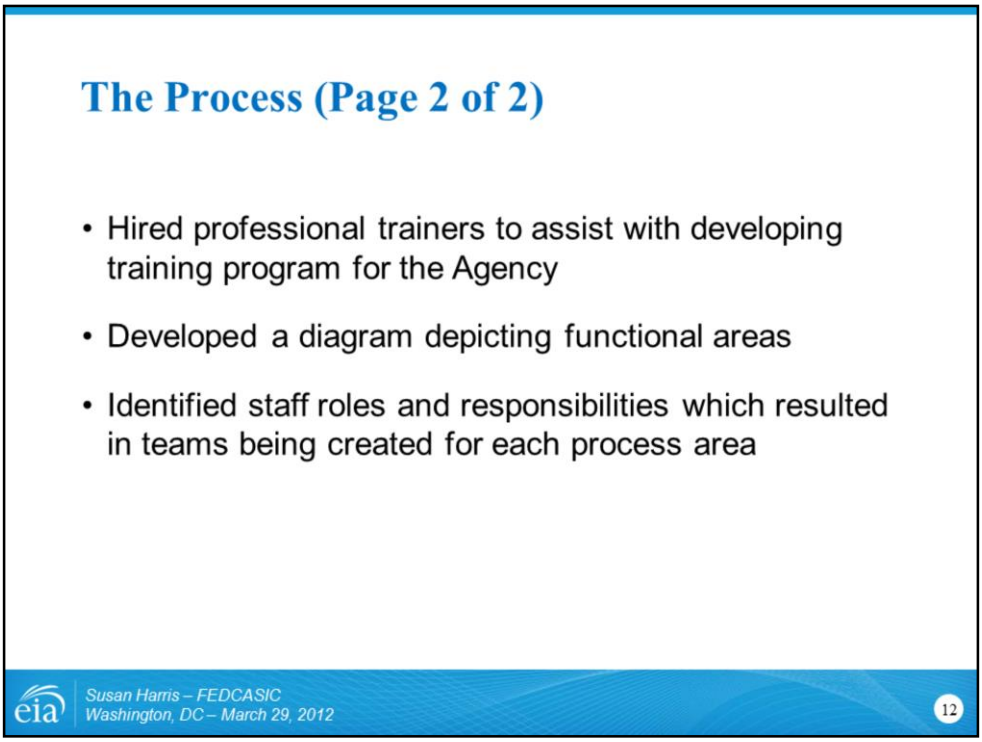


Developed a conceptual data workflow diagram

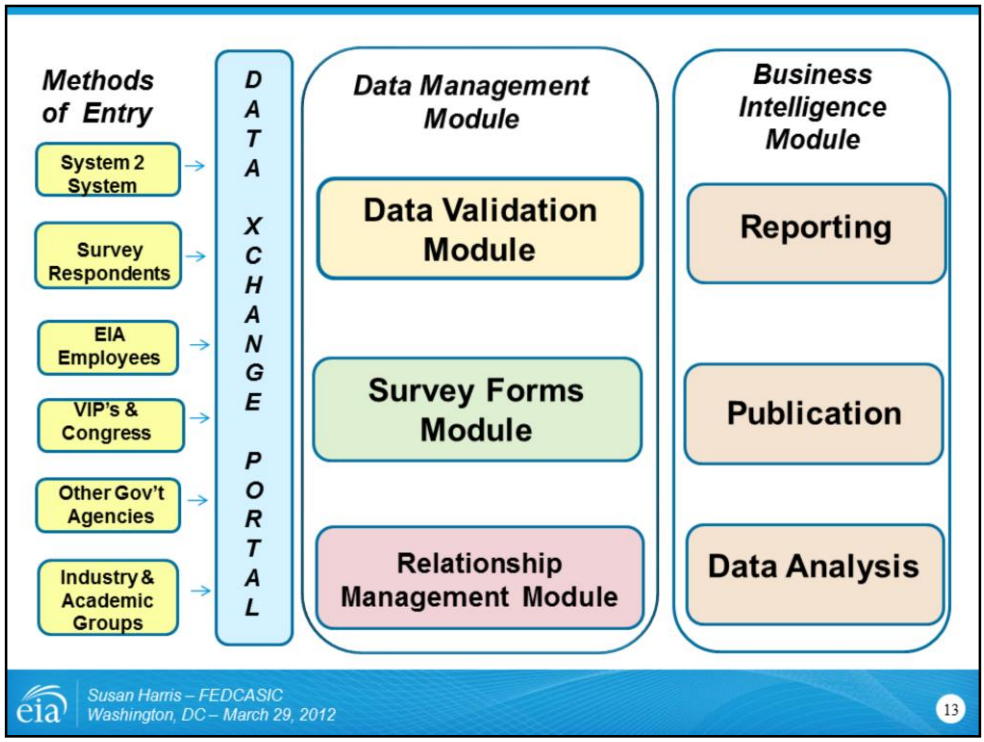
Data do not move from system to system RATHER data are stored in a central database and

The Process (Page 1 of 2)

- Identified transformation areas (Survey Family, Products, Processes, Systems) and prioritized within each area
- Identified and interviewed vendors whose business was cloud computing
- Selected applications and procured necessary licenses
- Held meetings with management and staff to inform them of the plan



•Recognized that training was crucial so we hired professional trainers to assist with developing a comprehensive training program and to assist with training staff



This diagram depicts each of the functional areas which were determined by conversations with stakeholders.

These functional areas are:

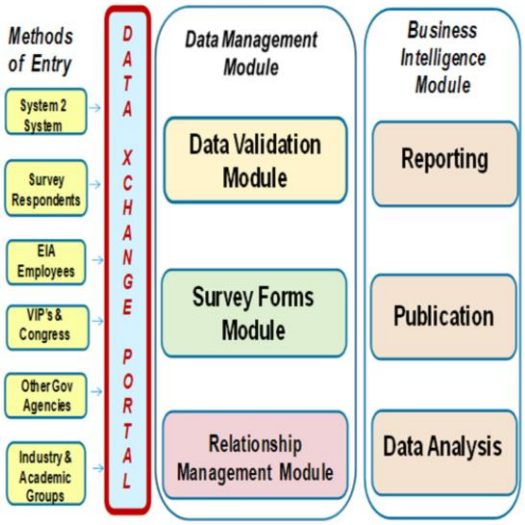
Method of entry

Data Exchange Portal

Data Management Module

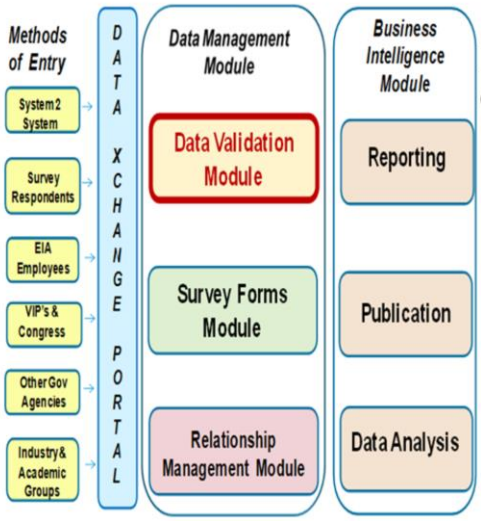
Business Intelligence Module

Life Ray



- Single point of entry for all Clients
- Roles Based content delivery w/controlled visibility
- Knowledge sharing workspaces
- User personalization

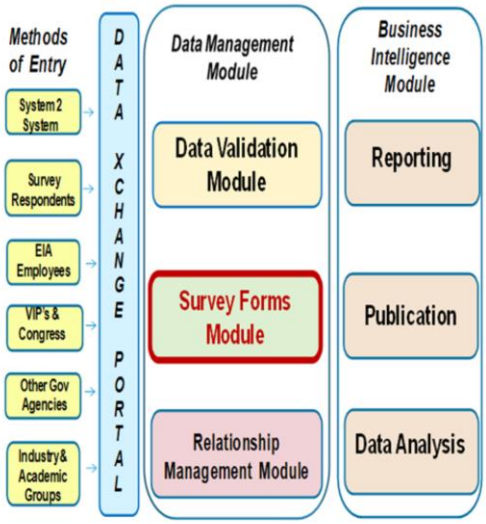
Informatica



Data management and data quality functions:

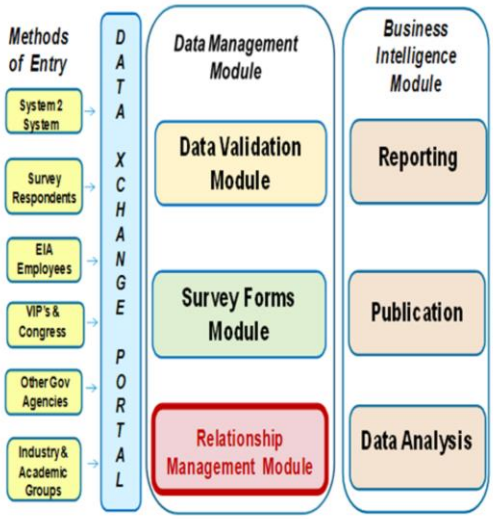
- Data Quality Ops (QC, QA, Cleansing, De-duplication, etc.)
- Data Exchange Automation (EDI, B2B, etc.)
- Data Models & Meta Data Management
- Edits (Basic and Complex)
- Aggregation & Imputations
- ETL (Importing and Exporting Data)

Qualtrics



- Design and create web based data collection forms framework
- Allows respondent direct input
- Represents the most common mode of data submission for EIA

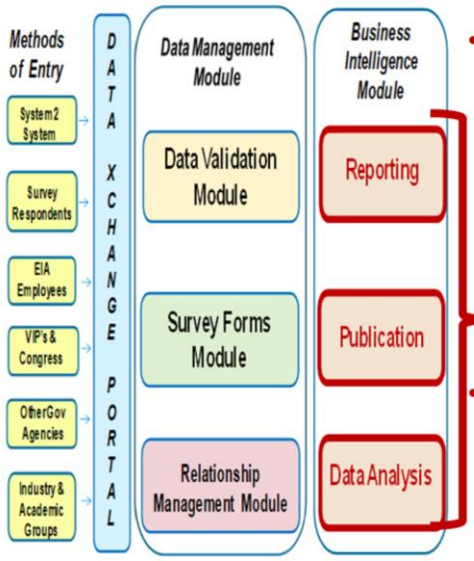
Salesforce



Supports all Customer Relationship Management (CRM) activities:

- Survey Management,
- Cycle Management,
- Frames Management,
- Contact Center,
- EDI & B2B,
- Project Management, and
- Request Management

Jaspersoft & SAS



- Reporting & Data Analysis
  - Tier 1-2 level Query,
  - Custom & Ad Hoc Reporting,
  - ETL,
  - Data Integration
  - Analytical Imputations & Algorithms,
  - Dissemination, and
  - Reports & Dashboards
- Publication
  - Reports & Dashboards
  - Publishing Content Management

What's the schedule for moving towards cloud computing?

By End of 2nd Quarter CY2012 (1 of 3)

- Implemented data xchange portal
- Completed the transformation of the EIA-111, "Quarterly Electricity Imports and Exports Report"
- Completed the redesign of Internet data collection capabilities and Tier 1-2 edits for the EIA-22M, "Monthly Biodiesel Production Survey"
- Redesigned and implemented new publication products and reports generated by the EIA-22M, "Monthly Biodiesel Production Survey"

By End of 2nd Quarter CY2012 (2 of 3)

- Begun transformation of the next 6 surveys weekly petroleum supply surveys (EIA-800 through 809) to include Tier 1-2 data edits
- Defined and designed the weekly motor gasoline price (EIA-878) and diesel price (EIA-888) reporting and publication functions
- Defined and designed the winter heating fuels (EIA-877) reporting and publication functions

By End of 2nd Quarter CY2012 (3 of 3)

- Designed and implemented a comprehensive training plan, focused on end user utilization and business process optimization
- Provided overview training displaying tool capabilities
- Provided technical or functional training of the tool
- Provided training to EIA staff as surveys are transformed

By End of 3rd Quarter CY2012

- Completed the transformation of the next 6 surveys weekly petroleum supply surveys (EIA-800 through 809) to include products and reports
- Continued to provide training to EIA staff as surveys are transformed
- Completed the transformation of the EIA-22M, "Monthly Biodiesel Production Survey"
- Retired the Integrated Survey Management System (ISMS) that supported the EIA-22M survey

For more information

U.S. Energy Information Administration home page | www.eia.gov

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