



# Virtual Node

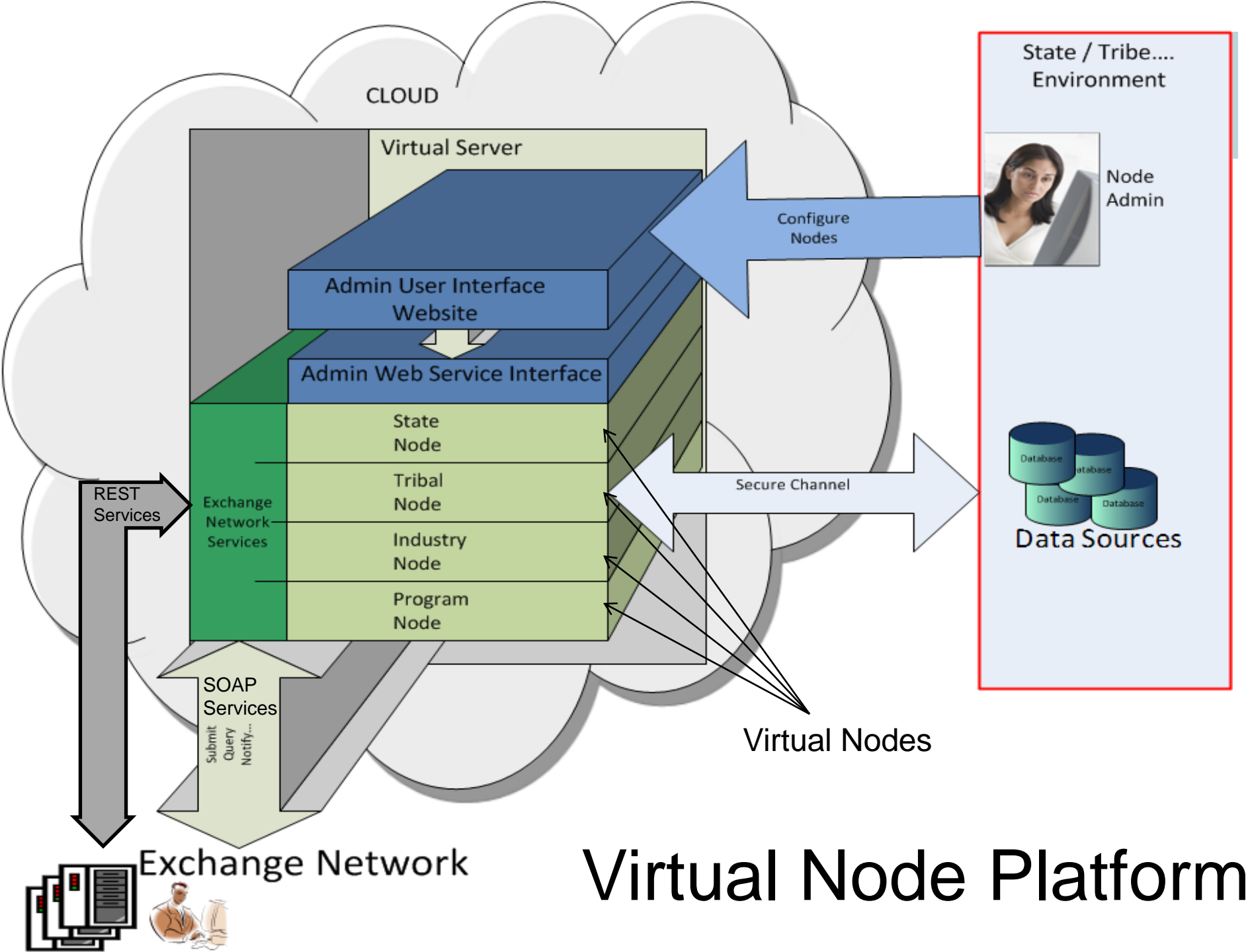
## IPT Summary and Recommendations

April 10, 2013

# What is the Virtual Node



- A central node server that hosts any number of partner nodes: state, tribe, region, agency, etc.
- Each partner node functions like a conventional node only it is easier and less costly to set up and maintain
- Eliminates need for node servers and server administration
- Each partner node is configured on the Cloud Node Platform by filling out forms in the Virtual Node Admin Portal



- Virtual Node Integrated Project Team (IPT) kickoff in late August 2012
  - IPT Charter adopted on 8/28/2012
  - 14 states participated in the IPT
- Objective:
  - “...define the requirements and policy implications for a cloud based, centrally managed, Exchange Network Node installation.”

# IPT Activities and Approach



- Questionnaire to collect feedback, priorities and assess needs of the team
- Multiple analysis and requirements meetings held over a period of 4 months
- Creation of Virtual Node Guidance and Recommendations Document
  - Reviewed by IPT participants
  - Final version released 1/29/2013

# Anticipated Benefits



- Reduces initial barriers and burden to EN participation
- Minimizes Operational Costs/Burden
- Simplifies adoption, implementation of new data flows
- Simplifies staying current as Network data flows change
- Enables the data publishing strategy
- Achieves a more stable data exchange environment

Four example use cases identified by IPT:

- 1) Submit data to other EN Trading Partners
- 2) Publish data via Query and Solicit
- 3) Publish data via REST services
- 4) Receive data from EN Trading Partners

# Virtual Node Adoption Feedback



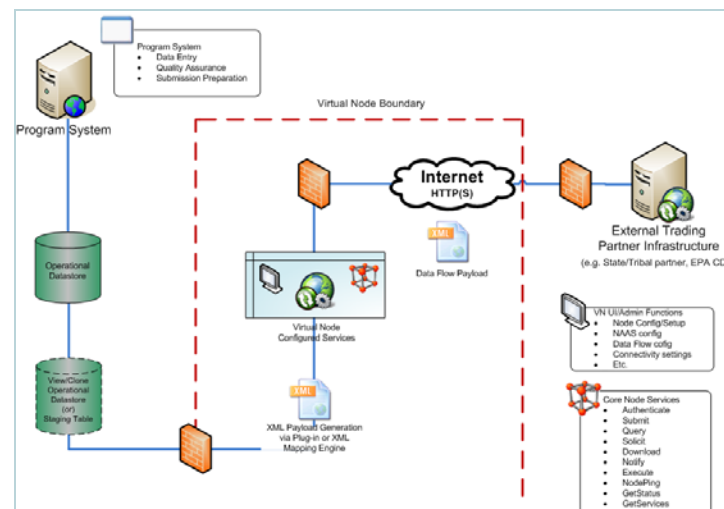
- 64% of IPT participants would consider adopting the Virtual Node for new data flows
- 55% of IPT participants would consider migrating their existing flow to the Virtual Node
- 55% of IPT participants prefer to reuse existing EN configuration or plug-in investments for existing flow adoption



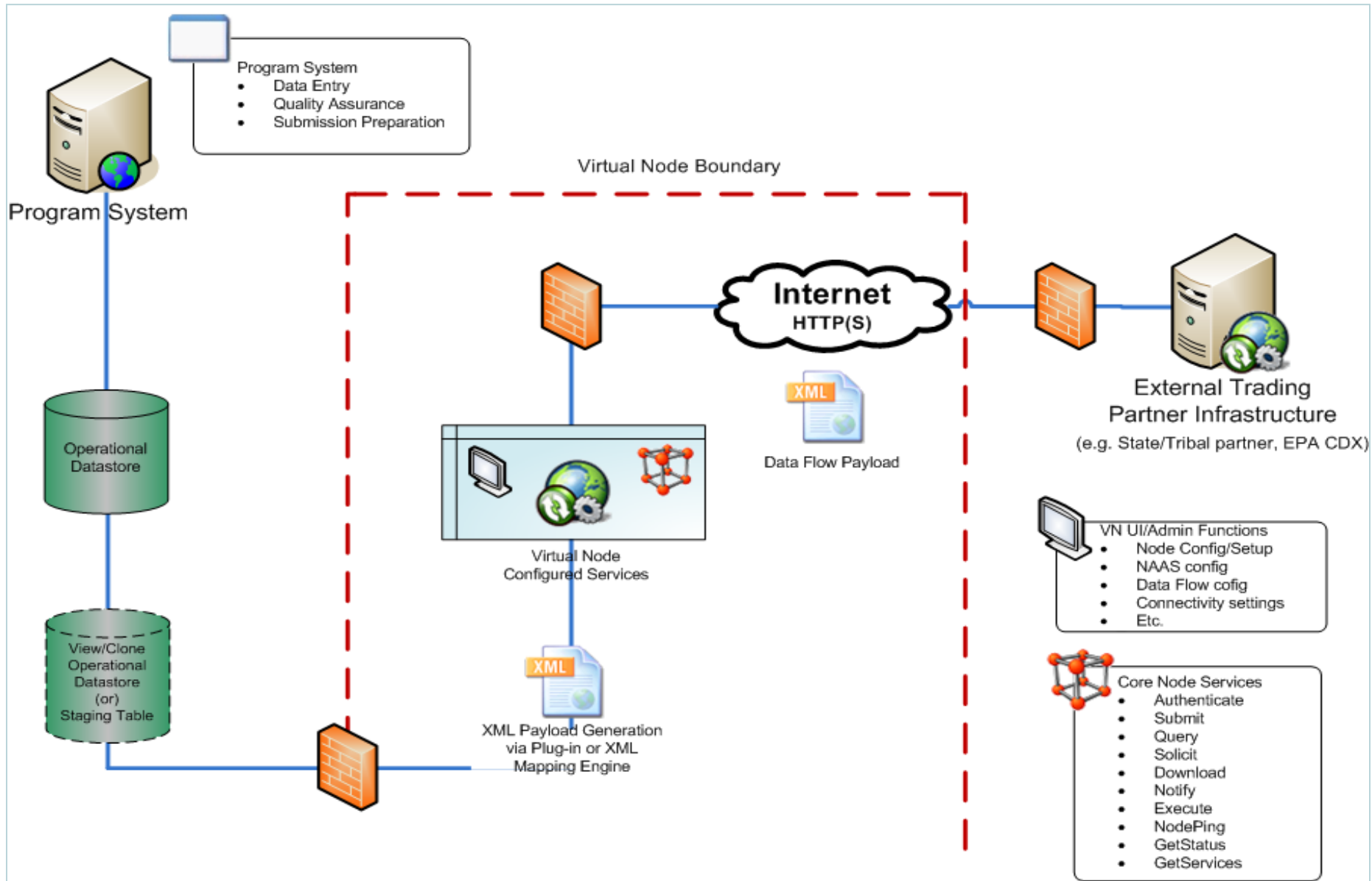
# Virtual Node – Key Themes



- Security and data access are **key drivers** to adoption patterns based on IPT member feedback
- Features needed include: Standard EN protocols, best practices for Node Administration, focus on data publishing/discoverability
- Two key integration options:
  - Partner Data is securely connected to the Virtual Node
  - Staged (copied) partner data in the cloud is connected to the Virtual Node (Standardized Staging Tables)



# Example Virtual Node Integration Option



# Virtual Node Adoption Patterns



Virtual Node securely accesses partner data store or staged / database copy at the partner site

## Key Benefits

- Simplest most efficient architectural approach with business process improvements
- Little or no data administration
- Reuses investment for existing flows
- Data mappings reused for existing flows
- Data could be as current as real time
- Data mapping process is simplified and plugins are supported

## Additional Considerations

- Requires setup of secure channel / VPN
- Latency may occur in data publishing models if staged locally

## Virtual Node accesses shared/standardized staging tables in the Cloud

### Key Benefits

- Data mappings reused for existing flows
- Reuses investment for existing flows
- Mitigates database access concerns

### Additional Considerations

- Requires administration of staged databases
- Requires extract and load process for putting data in staging tables

- Three core functions recommended by IPT
  - Administrative Management - Configure, report, audit
  - Security - Manage users/permissions to Node and flows
  - Data Flow - Configure, schedule, publish, orchestrate, deploy
- EPA provided Virtual Node Administration Portal
- Virtual Node Security Administration
  - EPA Virtual Node Administrator
  - Virtual Node Administrators
  - Virtual Node Data Flow Administrators

# Implementation and Operational Considerations



- The following topics are covered in the recommendations and guidance document
  - Approaches for Transitioning to the Virtual Node
  - Resource Planning for Virtual Node Implementers
  - Help Desk Requirements
  - Training and Documentation Requirements
  - Change Management and Governance

- Solicitation of volunteers for data flow adoption
- Refining Virtual Node features based on volunteer participation
- Outreach for additional volunteers from new and emerging Exchange Network participants
- Develop “Virtual Implementation Kit”
- Establish support structures for Exchange Network
  - Helpdesk
  - On-Line and adhoc Forums
- Assess/plan resources for ongoing operations

QUESTIONS?