

API gateway: Management tool that sits between a client and a collection of backend services.

DATAPOWER

- Services management IDL, Version 10.
- Accurate XML processing
- XML Acceleration
- B2B - business 2 business comm.
- API Gateway
 - first physical -
 - Docker / IBM cloud → Redhat openshift
 - Data power on VM Ware →
 - compare differences
- IBM provides private instance with cost provides services on cloud.
- Data power follows SO architecture
 - Service oriented

- Implements security, TLS, certificates
message transforms

format to the other format.

- Data power is middleware

XML → PDF → JSON

↓
front end request response

↑
backend request / response

~~Transformation~~

- Enrichment of XML (add / remove)

XML → XML

Medium

- Message! Header, payload content → data

for consumers
of devices

after submitting,
data is receive in XML

- **Security** - AAA, certificates, certificate implant
 - encrypting message
 - message level security
 - Transport level security - encrypt message they don't know what we are sending.
 - for communication with diff. protocols.

TLS

- stores certificates, monitors them

- Routing

- based on condition, decide where it should go to.

- Using MPG. - Multi Protocol Gateway

- Python plugin to do import/export

DataPower Versions

- DGXT - optimal software Interpreter (1999)
- XSLJIT - optimized software compiler (2000)
- XG3 - optimized hardware acceleration (2001)
- XA3S - First XML accelerator (2002)
- XS40 - First microchip XML security gateway (2003)
- XGU - OEM HW Solution (2004)
- X150 - Integration appliance (2004)
- XGU -
- R3.5.1, P3.6

→ Product portfolio:

- XA3S XML Accelerator
 - centralised XSLT Management
 - reduces cost and complexity
 - increased performance
 - accelerates SOA and web services
- XS40 XML Security Gateway
 - Purpose-built for SOA Security
 - Provides comprehensive XML security
 - Advanced XML firewall
 - compliant with most web service standards

- X150 Integration Appliance
 - Enhanced protocol support
 - Transformations, Integration
- X152 integration
- XG4S XML gateway
- XC10 caching
 - XB62, B2B, user profile
- ID6 IBM DataPower
 - gateway framework
 - version 2018
- 2010 Web 2.0 (REST/JSON)
- 2012 DataPower Virtual Edition
- 2013 API Management
- 2014 REST Management API
- 2015 JavaScript Runtime (Gateway Script)
- 2016 DataPower Gateway for Linux
- 2017 Tenant Isolation
- 2018 API Gateway Service
- 2019 Security enforcement policies
- 2020 DataPower Gateway V10

most API version is V.5
runs on M.P.b.

- new version runs on All gateway

Web Service Proxy:

- import WSDL if you use SOAP
- + readily available WSDL

XML Firewall: Similar to MPG

- It can only accept web service call on a single port.
 - HTTP, HTTPS
- Loop-back Service
 - When no backend server, work on response we can use firewall.

B2B: used in retail market.

one vendor to another

Multi protocol gateway

- Accepts requests from different systems
- Diff protocols

Policy → Rules → Actions

- Request hits on Front Side Handler.

Several Poling - (HTTP, MQ
in project)

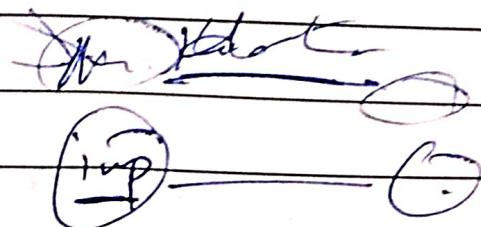
- Static - backend: all requests go to one backend.

XML : Manager: configuration of payload.

- Policy - Rules -

Request Rule

Response Rule



- When there is a system error, control flow request or response transferred to error rules.
 - custom errors \Rightarrow check password = 9 digits
 - error response is generated and given to front end system.
 - single request rule - bi-directional
- Processing actions
- Results for retrying

Policy:

Delivery Policy: Define transformation

predefined context

~~OUT~~

INPUT

PIPE

NULL

OUTPUT

XML Manager: {
 | payload size
 | derived
 | proxy
 | scheduling
 | }

caching: Information is stored in cache to reuse it later.

- Need to clear cache

(Style sheet cache, document cache)

Front side / Backside settings:

↓

Front side handler HTTP, MQ, SMTP, FTP

properties → get, put, post, delete

Propagate URI → static backend

dynamic backend

Backside setting: timeout, data input type

File Management:

- cert (public certificates)
- store (files for reference by default)
- export (config export)
- config (.cfg) (data power currency)
- local (NSD, ABL files)
- logtemp/ log store / temporary
holds all log files

Variables

- Local :
- Service: predefined, limited, specific to services (MPC)
- Content: created, no functionality
- Global: can be accessed out of servers

Elements

Deliver Value. Drive Momentum™

→ Tradition elements:

- `dp: accept`: allows or rejects further message processing
- `dp: append-request-header`: Appends a value to a (client request) specific header (server response)
- `dp: dump-nodes`: outputs a node set to a file in the temporary directory
- `dp: freeze-headers`: locks header values and prevents future processing
- `dp: gateway-script`: calls Gateway script program from XSLT stylesheet
- `dp: parse`: parses a well-formed XML to produce a node set
- `dp: reject`: denies access to my service

DATAPOWER

dp:remove - http-request - header
 - response - header
 - mime - header

• dp: send - error : sends custom error to client

• dp: set - http-request - header Adds or
 X response - header. replaces header

• dp: set - variable dp: url - open
 dp: agt - execute

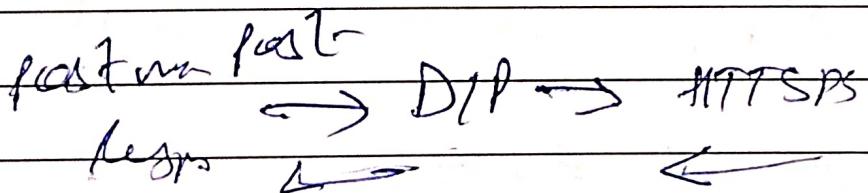
• dp: set - target

dp: canonicalize

• dp: set - variable

dp: dump - nodes

dp: load - balancer - group - ip -



NO skip backbone

• JSON, static Backend specify url -

11232

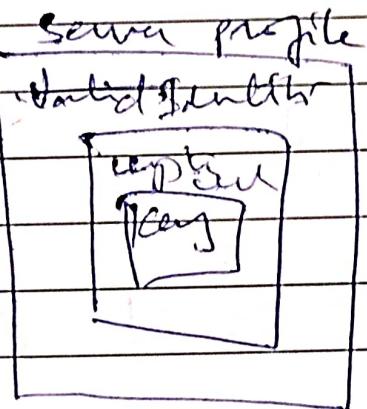
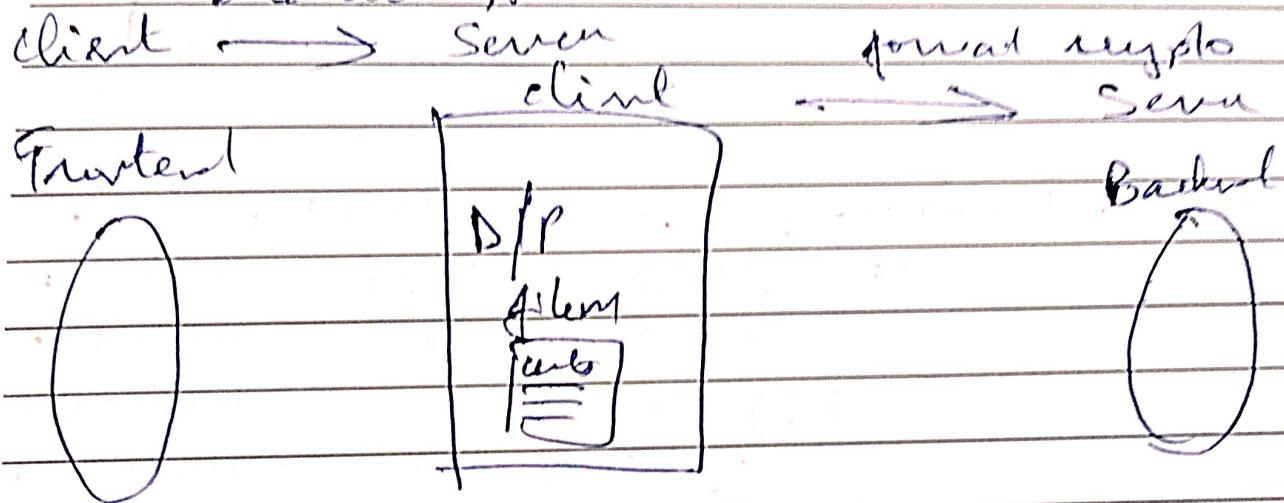
• JSON, dynamic Backend. url in transform file

• XML -> JSON, dynamic Backend (Anthes) policy

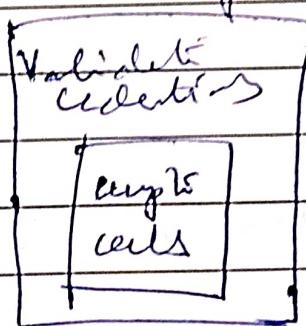
• config(XML, dynamic, URL, Transformer, SSL client)

SSL (Secure Socket Layer)

backward crypto



client profile



mutual : more secure
uses both certs from client
and server.

6.12.22

ValueMomentum Software Services (P) Ltd

SLM, AAA load balancer PoS

SLM: Service Level Monitoring



- threshold until options) set how many times it has to hit before -
- | - logging
- | - throttle
- | limiting attacks

AAA: Authentication Authorization Auditing

↓

enter into

D.P

- extracting identities
- Validating identities (LDAP auth)
- extraction of resources
- providing authorizations
- Auditing (checking how many success)

K.B

