Comparison: OData vs RFC (SOAP) in SAP

1. High-Level Differences

Feature	OData (REST)	RFC via SOAP
Protocol	HTTP/REST	SOAP (XML over HTTP)
Data Format	JSON / XML	XML (SOAP Envelope)
URL Structure	RESTful (method in URL)	Function module specified in XML body
Usage in Postman	Use different HTTP methods (GET, POST, etc)	Always POST method with XML body
Parameters	Passed in URL or JSON body	Passed as XML tags inside SOAP Body
Response Structure	Clean JSON or XML	Full SOAP XML response
Gateway Setup	Done in SEGW (OData Project)	Done via SOAMANAGER (Binding RFC as a WebService)

2. How OData Works

- Define Entity Type, Entity Set in SEGW.
- Redefine methods like GET_ENTITY, GET_ENTITYSET, CREATE_ENTITY, etc.
- Implement custom ABAP logic inside these methods.
- Register service to Gateway.
- Access via URL like: /sap/opu/odata/sap/ZMY_ODATA_SRV/EntitySet('ID')
- Test using Gateway Client or Postman.
- Input for POST is JSON body. For GET, parameters can go in the URL.

3. How RFC via SOAP Works

- Expose a Function Module as a Web Service using SOAMANAGER.
- A binding URL is generated.
- You always POST to this one URL.
- The SOAP XML body specifies the function module and input parameters.
- SAP reads the body, executes the function, and returns output as SOAP XML.

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- Headers required: Content-Type: text/xml (SOAPAction optional)
- Example SOAP Request includes Envelope, Header, Body with FM name and input.
- Example SOAP Response includes FMResponse node with output fields.

4. Summary of Roles

- SOAP URL: Identifies the Web Service endpoint (RFC binding).
- SOAP Body: Carries input data and tells SAP which Function Module to execute.
- SAP executes the function and returns export data inside SOAP response.