ORACLE

Hybrid Integrations and the OIC Connectivity Agent

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Hybrid Integrations and the OIC Connectivity Agent

Integration Challenges

ORACLE Integration

Applications	Process	Analytics
CX, HCM & ERP Integration	Automation & Insights	Streaming & Bulk Integration

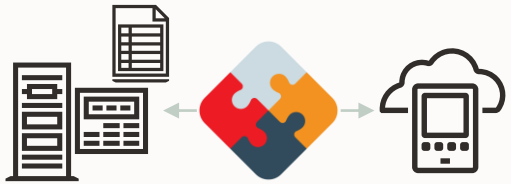
Application Integration Patterns

SaaS to SaaS

SaaS to On-Prem

On-Prem to SaaS

Bulk Load/Export to/from SaaS with MFT/SFTP

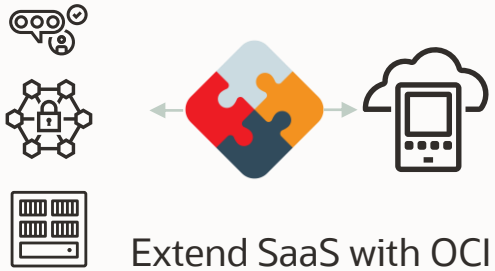


Bulk Load/Export to/from SaaS

Lift and Shift App/SOA to Cloud

Extend SaaS with OIC Process

Extend SaaS with OIC VBCS



Extend SaaS with OCI

Enterprise connectivity

Prebuilt adapters for cloud, on-premises, Oracle, non-Oracle, and custom apps

ORACLE Integration

ERP Connectivity

ORACLE NETSUITE
ERP Cloud
EPM Cloud
Commerce Cloud
Utilities
Logistics
Trace & Trace
ORACLE E-Business Suite
ORACLE JD Edwards
salesforce commerce cloud
SAP S/4 HANA
SAP Commerce Cloud
SAP Ariba
CONCUR
Shopify

HCM Connectivity

HCM Cloud
Taleo Talent Acquisition Cloud
Taleo Talent Cloud for Midsize
successfactors An SAP Company
workday.

Productivity and Social

Jira
DocuSign
facebook
twilio
Google Calendar
Eventbrite
twitter
Trello
Gmail
Google Tasks
box
MailChimp
MS Contacts
Adobe Sign
MS Email
LinkedIn
SurveyMonkey
MS Calendar

CX Connectivity

Engagement Cloud
CPQ Cloud
Eloqua
Responsys
Marketo
salesforce
PayPal
Field Service Cloud
Service Cloud
Policy Automation
ORACLE Siebel
servicenow

Database Connectivity

Database Cloud
ATP Cloud
ADW Cloud
Database
MySQL
Microsoft Azure
SQL Server
IBM DB2

Enterprise Messaging

Apache Kafka
OCI Streaming
JMS, AQ
IBM MQ Series

Technology Connectivity

AS2
REST
FTP
SOAP
SOA Suite
FILE

RPA Connectivity

UiPath
AUTOMATION ANYWHERE

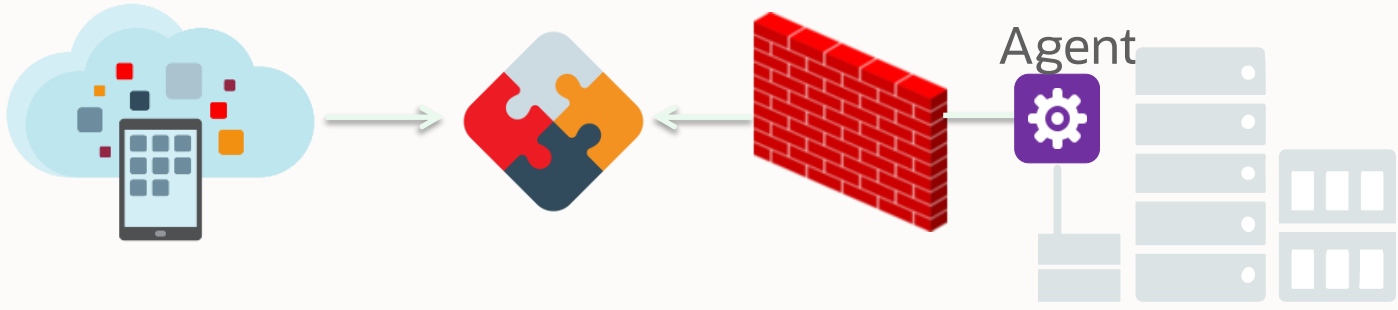
Future Proof

Limit maintenance and upgrade costs
Oracle supported

For more detailed information see here

Oracle OIC Agents

for SaaS and On-premises integration

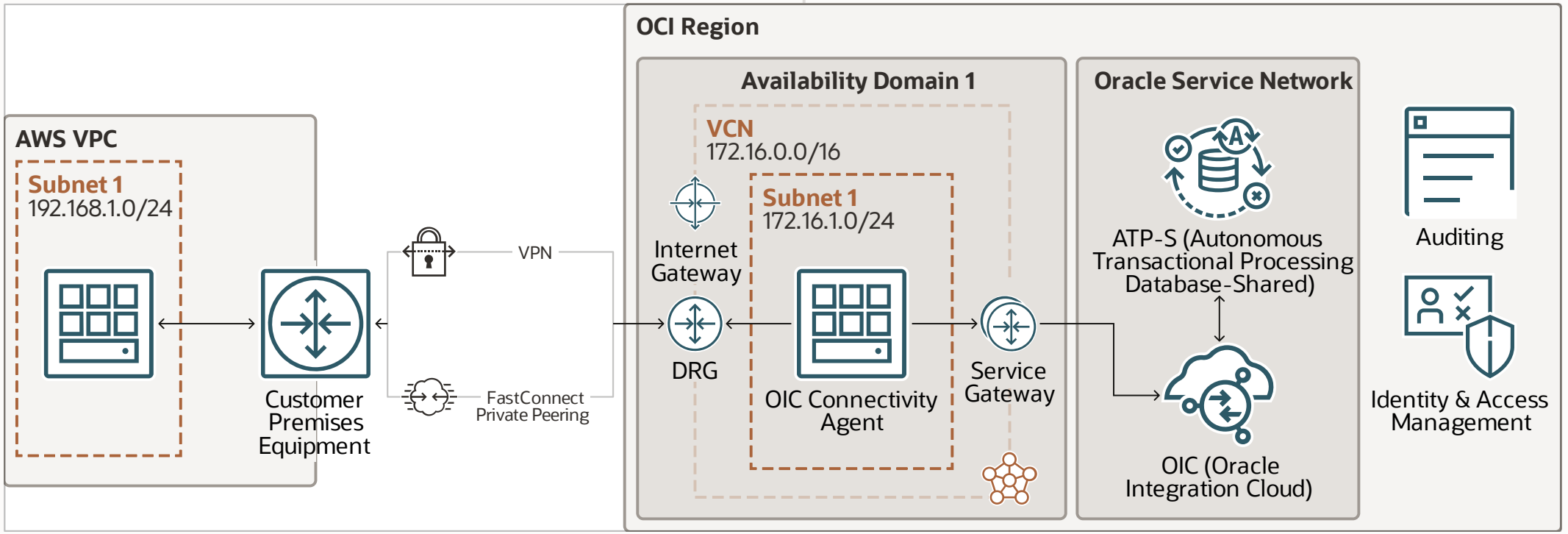


- Enables secure integration with on-premises systems without firewall pin-holes
- Brokers all communications between both OIC UI Designer and Runtime and the on-premises systems.
- No DMZ components required (however can cohabit with it)
- Only requires HTTPS (443) access to the outside world
- OIC will never reach into the customer's data center
- Communication is always initiated from on-premises upstream via the Agent
- Ground Agent dis-allows any explicit inbound connections. Connection always established to ORACLE cloud.
- Uses JCA adapters and JCA framework to invoke on-premises application endpoints.

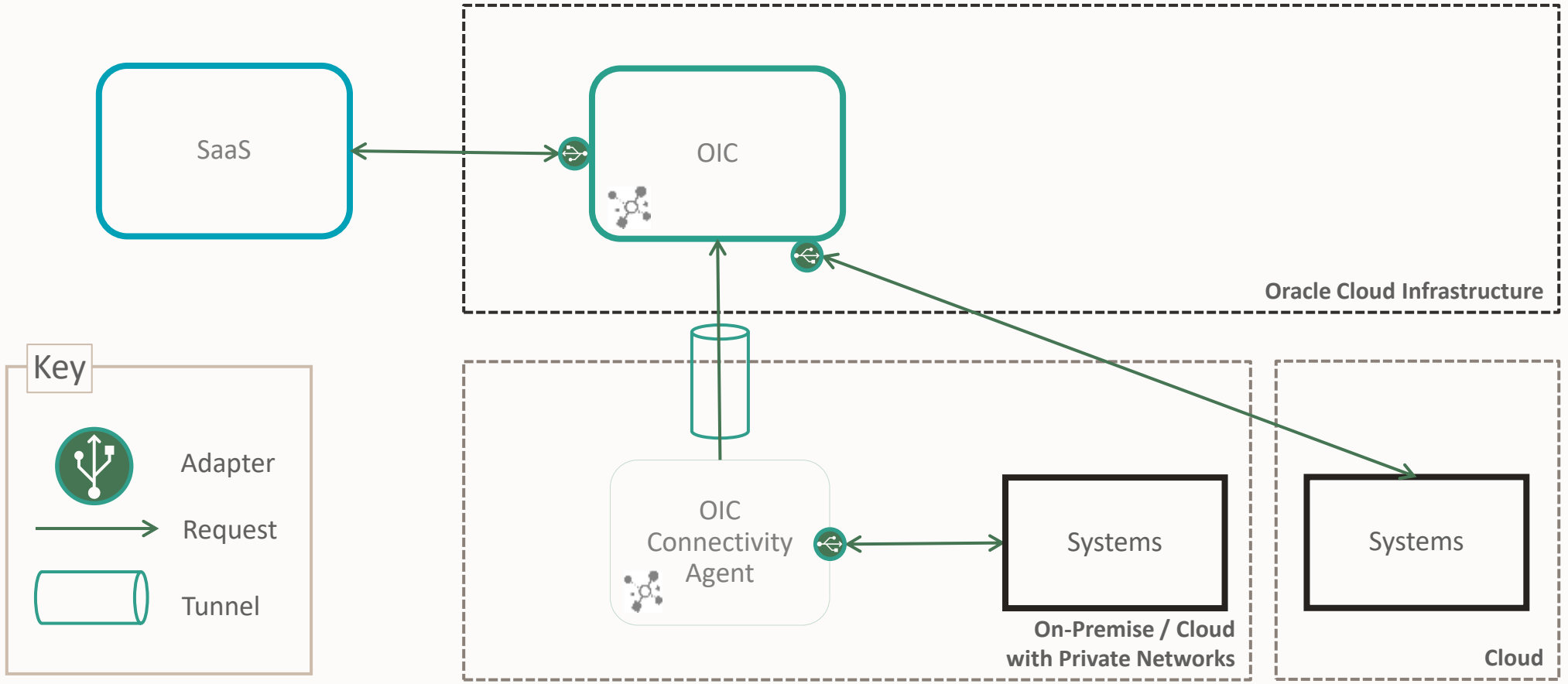
Multi-cloud Private Network Connectivity Through OIC

Reference Architecture

- Prebuilt application integration and process automation for quick connectivity.
- Gain end-to-end visibility across SaaS, custom, and on-premises apps.
- No-code dataflow designer for ETL/E-LT to accelerate data science and analytics.
- Design, execute, and monitor data mesh replication and stream data processing.
- Expose your APIs for developers and partners to create new business models.
- Real-time, serverless, Apache Kafka–compatible event streaming.

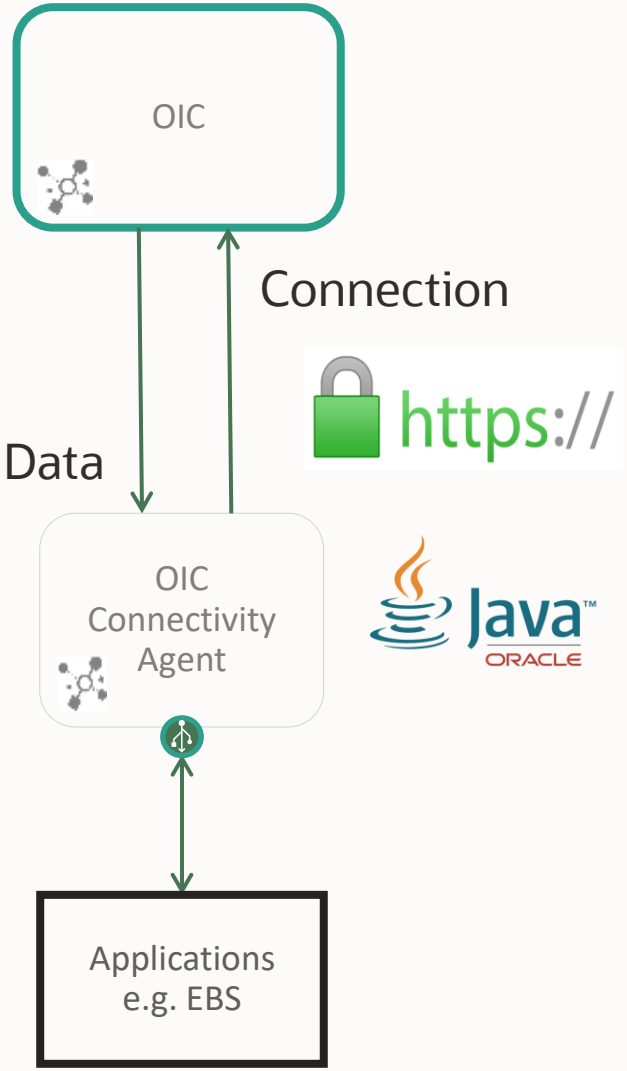


Hybrid Integrations using OIC

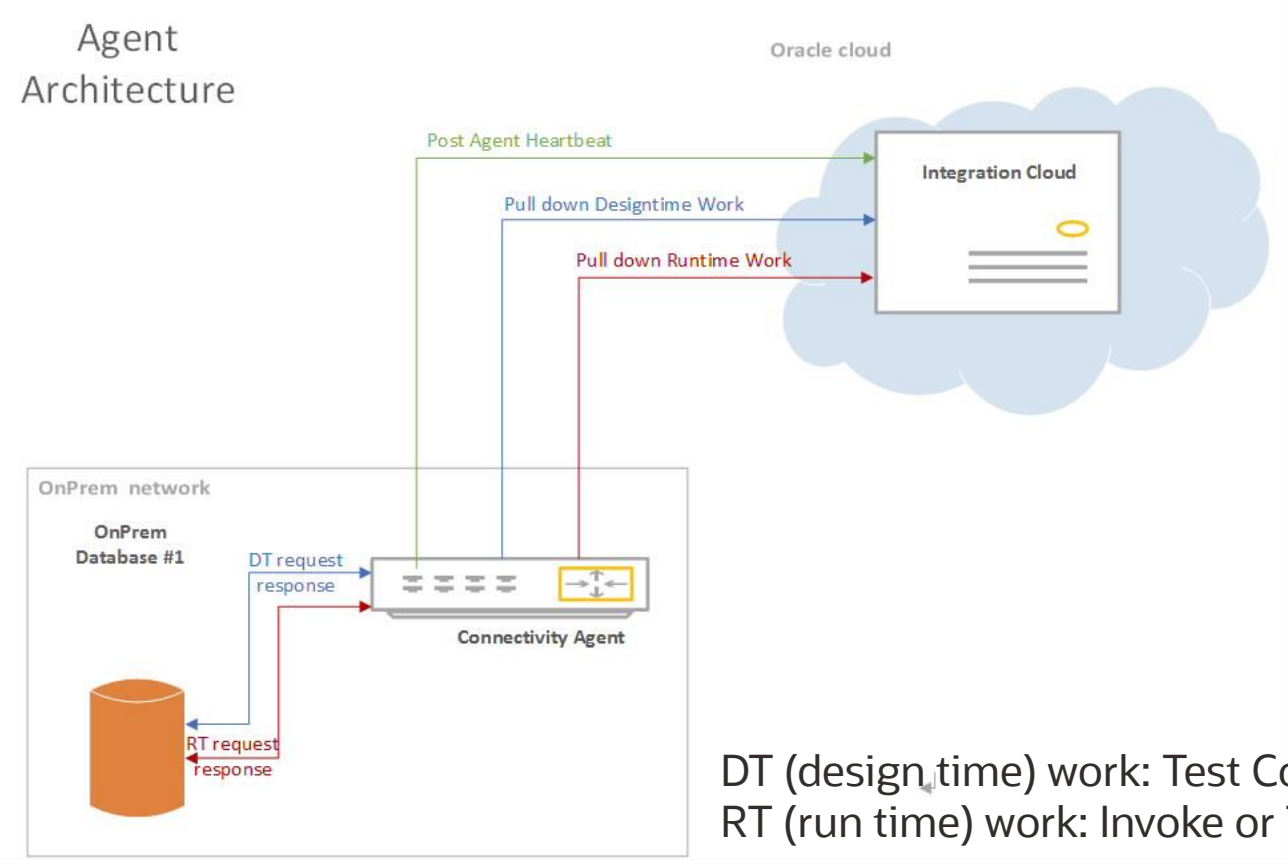


Protocols & Technologies

- Java Based Agent
  - Runs Adapters Locally
- All Network Traffic Uses HTTPS
  - Connection Initiated by Agent
- Use Existing Proxy Server
- No Inbound Ports Opened
- Only Port 443 (HTTPS) Outbound



Agent Architecture



- From a network perspective, the agent should be co-located in the same network as the end system for best performance.
- Ideally, there should be no firewall in the network route between agent and end system.
- The agent is capable of routing OIC-bound requests and on-premise requests through a proxy server.

DT (design time) work: Test Connection, Activation, Deactivation requests
RT (run time) work: Invoke or Trigger requests

Source: https://www.ateam-oracle.com/post/ics-connectivity-agent-concepts-and-best-practices

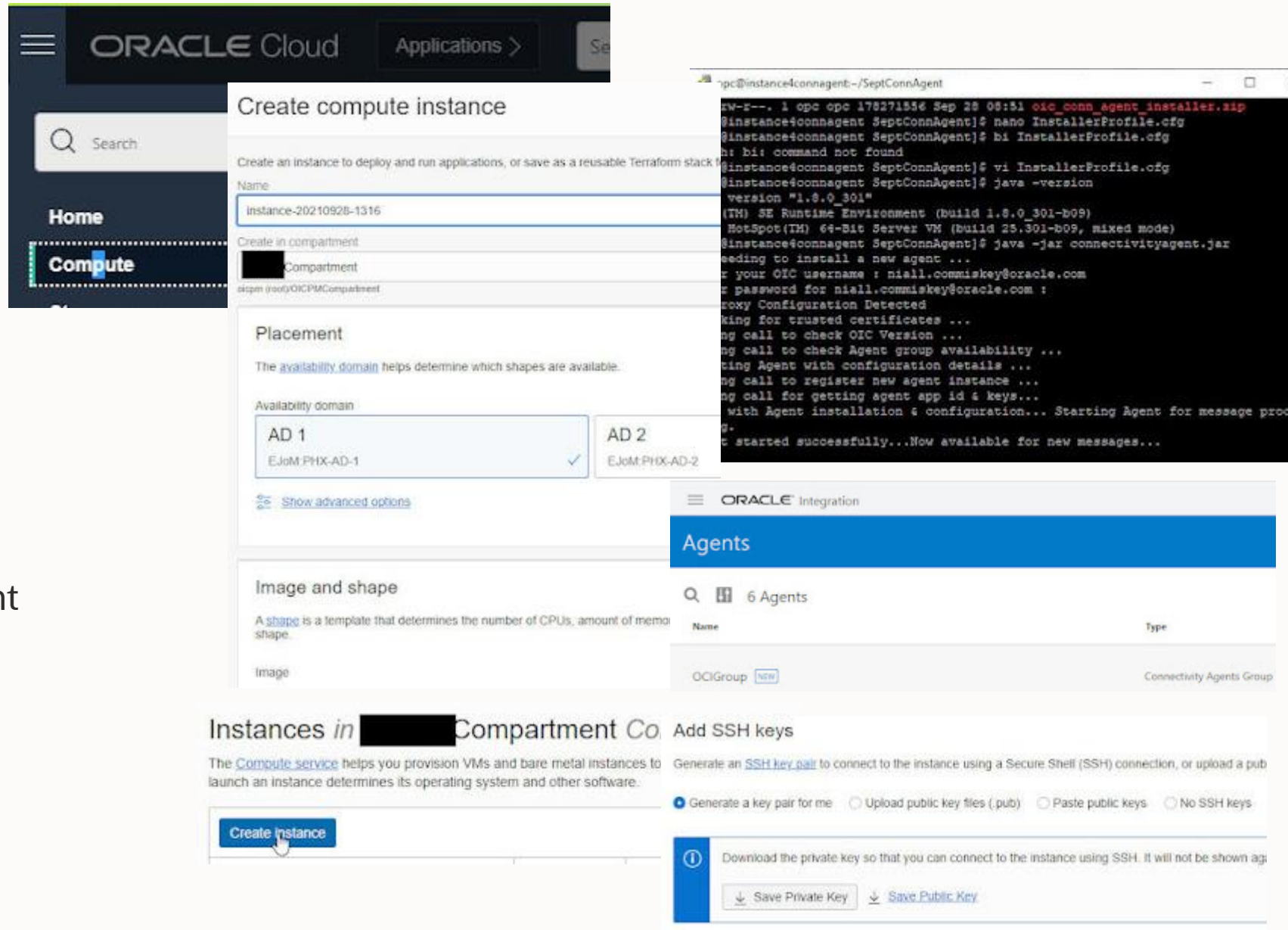
Installing OIC Connectivity Agent

Prerequisites

– WAD deployment view

HL Steps

1. OCI Foundation Provisioning
2. Set-up Networking
3. Create Agent Group
4. Download OIC Installer
5. Download Configuration
6. Install OIC Connectivity Agent
7. Run OIC Connectivity Agent
8. Verify Agent Registered
9. Use Agent Group in OIC Connection



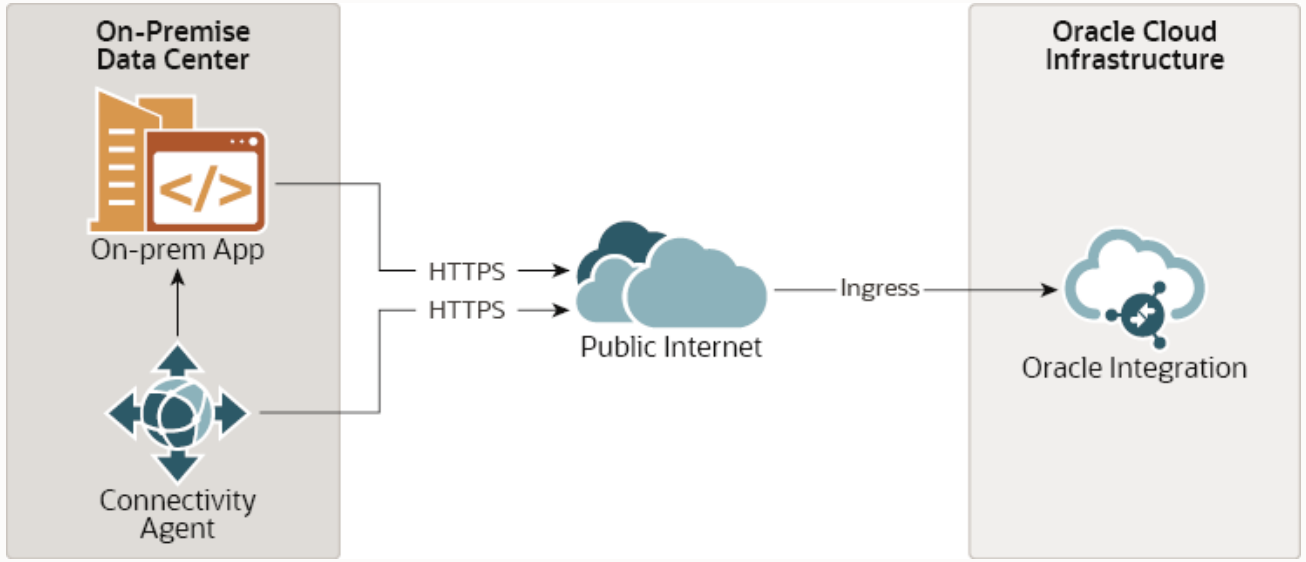
Optional DEMO

OIC connectivity to private OCI resources and installing OIC agent on OCI using Bastion Service

Connection Patterns for Hybrid Integrations

Public Internet Pattern

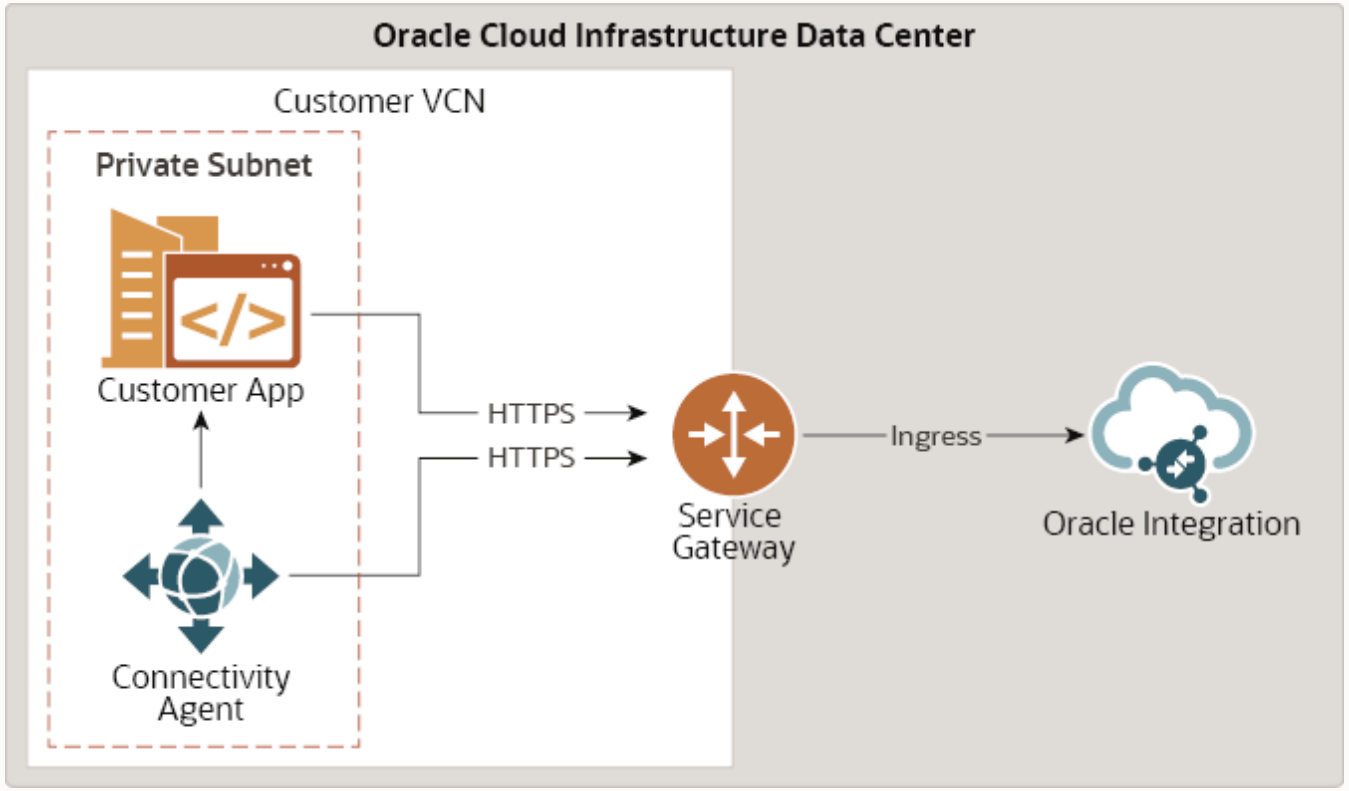
Agent deployed On-Premise or 3rd Party Cloud



- OIC will never reach into the customer's data center, communication is always initiated from on-premises upstream via the Agent

Oracle Cloud Infrastructure Only – VCN Pattern

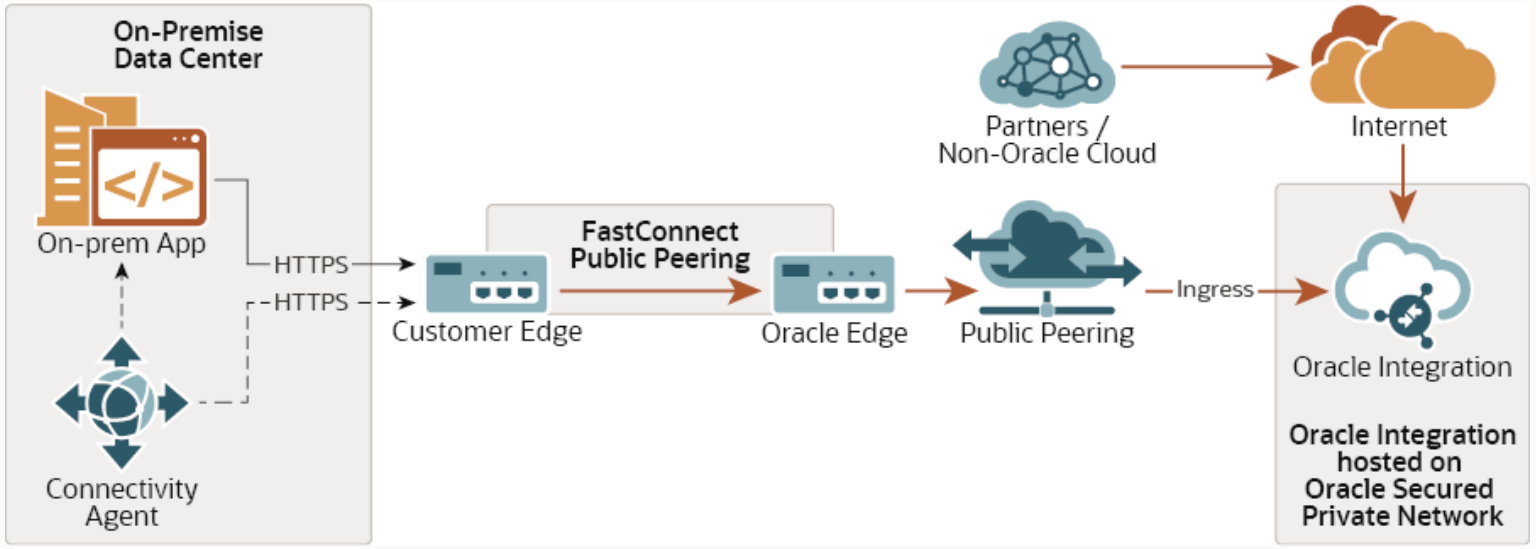
Agent deployed in Customer VCN – Private Subnet



- OIC Agent deployed in a private network within Oracle Cloud Infrastructure.
- Use this pattern for applications running within OCI.
- All traffic is routed locally and the public internet is not involved.
- Service gateways ensure that access to Oracle-hosted services is routed over the internal network.

FastConnect Public Peering Pattern

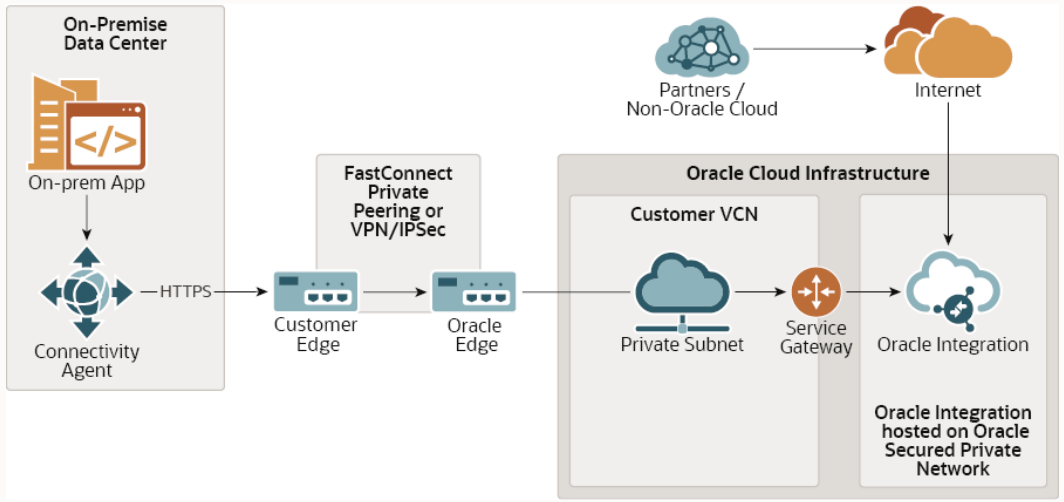
Agent deployed On-Premise or 3rd Party Cloud



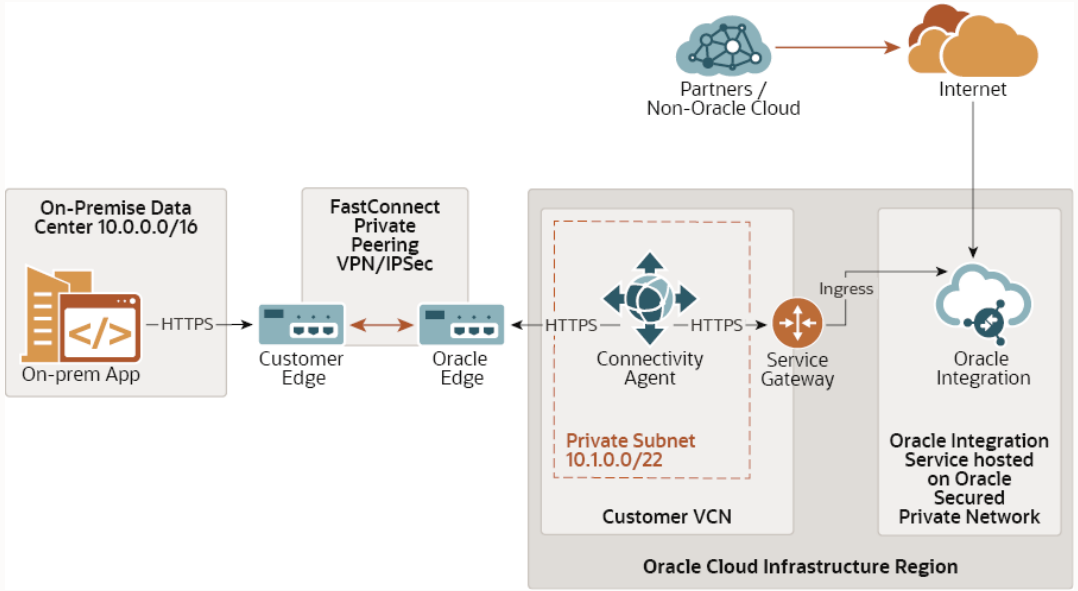
- OIC Agent deployed on the private (on-prem) network.
- Exclusive connection between the private (on-prem) network and OIC using a FastConnect public peering link.
- The inbound and outbound traffic to OIC goes through the FastConnect link.
- Faster and more reliable networking experience compared to the public internet pattern.

VPN or FastConnect Private Peering Patterns

Agent deployed in private (on-prem) network



Agent deployed in Customer VCN

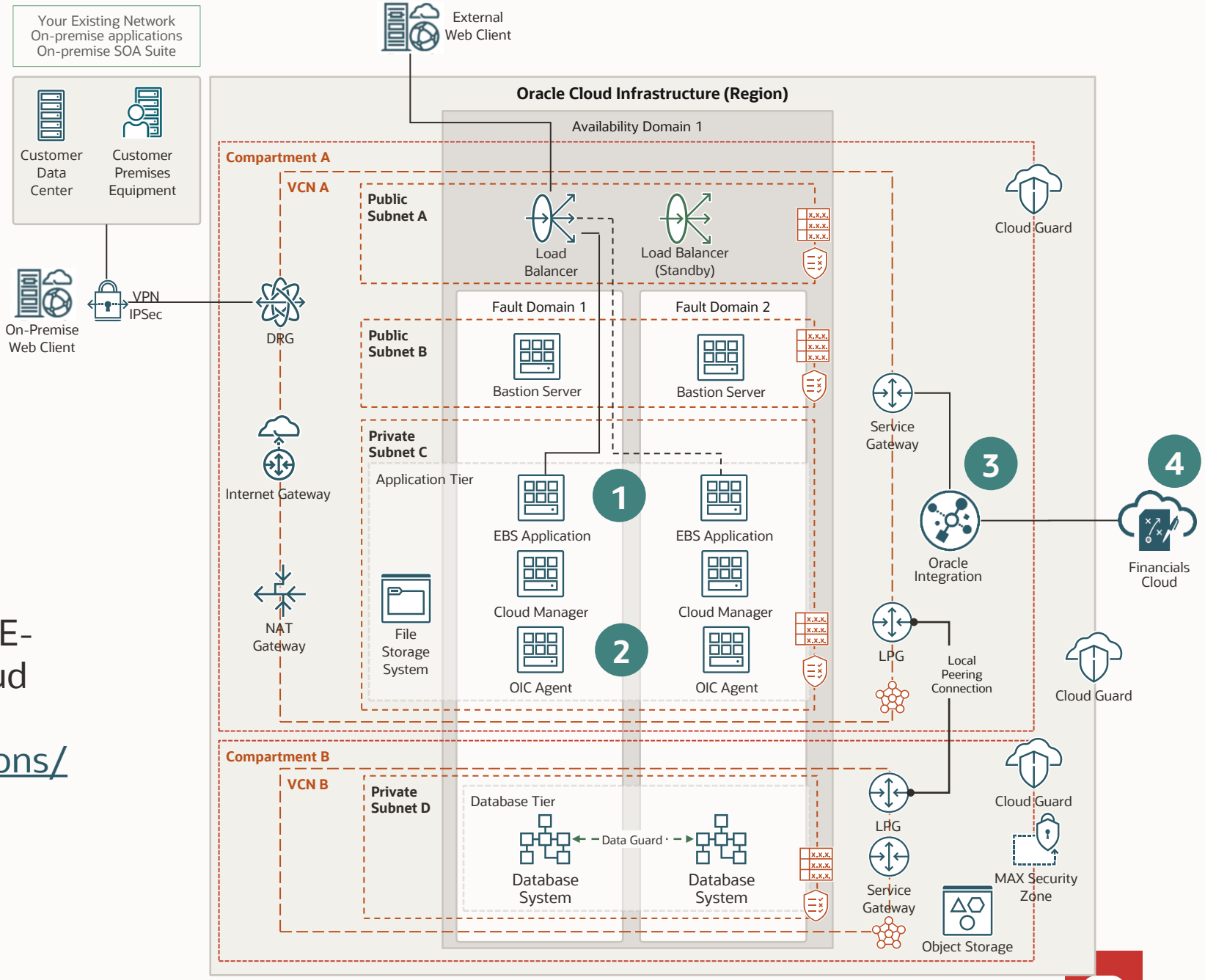


Move & Modernize EBS with ERP Cloud and OIC

1. E-Business Suite
2. OIC Agent with EBS Adapter
3. Oracle Integration
4. Financials Cloud

Reference Architecture:
Use Oracle Integration to Connect E-Business Suite with Financials Cloud

https://docs.oracle.com/en/solutions/oracle-ebs-erpcloud-integration/index.html



Adapters and the Connectivity Agent (Supported Adapters)

Invoke Role

- DB2
- File
- FTP
- Microsoft SQL Server
- MySQL Database
- Oracle Database
- Oracle E-Business Suite
- Oracle JD Edwards
- REST
- SAP
- Siebel
- SOAP
- Kafka
- WebLogic JMS
- IBM MQ Series - JMS

Trigger Role

- DB2
- File
- JMS
- Microsoft SQL Server
- MySQL Database
- Oracle Database
- Oracle E-Business Suite
- Oracle JD Edwards
- SAP
- Siebel
- WebLogic JMS
- IBM MQ Series - JMS

Always required

- OCI Streaming as Trigger (inbound polling)
- ATP and ADW with Private Endpoint
  - See Cloud Database Connectivity Support in Oracle Integration

Connectivity Agent Additional Features

- Linux and Windows Platform Support
- High Availability
  - Two agents in a Single Agent Group
  - Active-Active Configuration (except for File and FTP adapters)
- Support for 10MB / 50MB* Message Payloads
- Support for 1GB Files & Attachments
- Auto Upgrade
- Log Upload to OIC

Agent Limits

- Up to 5 (five) agent groups for a single OIC instance => up to 10 agents
- Timeouts for all connectivity agent-based outbound adapter invocations: Connection timeout 4 min (240 s)

* Message Payload size limit increased from 10MB to 50MB for SOAP, REST, SAP, File, FTP adapters, since May 2023

See/Verify OIC Service Limits for the current product version

OIC Agent News, Notes & Gems

OIC Agent News

https://docs.oracle.com/en/cloud/paas/integration-cloud/whats-new/index.html

https://docs.oracle.com/en/cloud/paas/application-integration/whats-new/index.html - Gen3

- Increased message payload size: 50 MB for endpoints accessed using the SOAP Adapter, REST Adapter, SAP Adapter, File Adapter, and FTP Adapter (since May 2023)

  (This is general to OIC and applies to the agent as well, for the supported adapters)

- REST Adapter with connectivity agent now supports invoking OAuth-protected, private REST endpoints (since April 2023)

Feature	Description	Minimum Version Required
Support for invoking OAuth-protected, private REST endpoints using the REST Adapter and connectivity agent	The REST Adapter now supports the invocation of OAuth-protected, privately accessible REST endpoints. A REST Adapter connection configured with an agent group must be used to invoke these privately accessible REST endpoints. When configuring the REST Adapter for use with the connectivity agent, the following security policies are now supported: • OAuth Client Credentials • OAuth Custom Two Legged Flow • OAuth Resource Owner Password Credentials See REST Adapter Restrictions and On-Premises REST API Support with the Agent in *Using the REST Adapter with Oracle Integration*.	22.2.1

- JDK 11 support (since November 2023)

Notes about the User running the OIC Agent

- **What Role do I need for running the Agent?**

ServiceAdministrator or *ServiceDeveloper* for downloading & installing the agent.

- **Can I use a Federated User* to run the Agent?**

*federated user – managed by a 3rd party identity provider (e.g. Azure), federated with IDCS

No, federated users managed by 3rd party identity providers are not supported for running the agent.

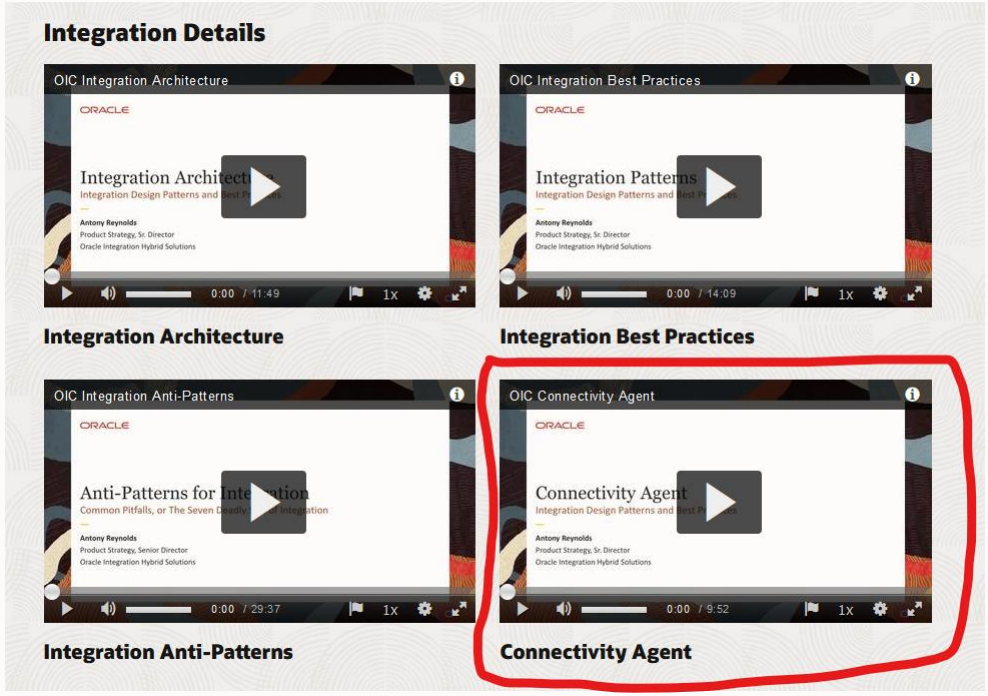
If you rely on user federation, you must create a nonfederated user to use specifically for installing the connectivity agent.

- **Authentication and Authorization**
  - The user running the agent gets authorized:
    A. when installing the agent
    B. when you manually stop/start the agent
  - Only Basic Authentication
  - !!! Password Expiration can be a common issue. Make sure you update the credentials in the *InstallerProfile.cfg* file, on the host where the agent is installed.
  - Agent upgrade occurs automatically and does not use these credentials.

Resources

OIC Bootcamp – On-demand training free of charge for Oracle Partners

https://go.oracle.com/LP=110450?elqCampaignId=296318



Key References

- Connection Patterns for Hybrid Integrations
- ICS Connectivity Agent stdout Log Rotation

Service limits

Verify OIC Service Limits (current product version)

Docs

- Manage the Agent Group and the On-Premises Connectivity Agent
- Troubleshoot the Connectivity Agent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