Dynamic Routing 3.3 Planning Guide

IMPORTANT
Updated Mar 26, 2018.
This document contains product characteristics and capabilities, including feature descriptions, deployment models, interoperability, performance specifications, security, and licensing requirements.

1. Introduction

Purpose

This document describes product characteristics and capabilities, including feature descriptions, interoperability, performance specifications, security, and licensing requirements.

Intended Audience

This document is intended for anyone who wants to gain a high-level understanding of the product features, functions, capacities, and limitations within the context of solutions and verified reference configurations.

Related Resources

Documentation

Title	Description	Audience
Avaya Dynamic Routing Planning Guide	Describes tested product characteristics and capabilities, including product overview and feature descriptions, interoperability, performance specifications, security, and licensing requirements.	Sales engineers Avaya Professional Services
Avaya Dynamic Routing Installation Guide	Provides procedures for deploying the Dynamic Routing application in the customer environment. This document includes installation, initial configuration and initial administration.	Implementation engineers
Avaya Dynamic Routing Cluster Management Guide	Describes how to configure the nodes and cluster, specifying the services running in each nod e. This document also includes the Cluster Management Tool documentation and services management.	Implementation engineers
Avaya Dynamic Routing Administration Guide	This document describes the Web Administration of Dynamic Routing, enities, call flows, etc.	Web Administration - Business End User
Avaya Dynamic Routing Maintenance Guide	This document includes basic maintenance procedures and troubleshooting checklists.	Support Team
Avaya Dynamic Routing Integration Guide	This document includes Admin API, alarms, CMS Connector, ICR integration, Metrics Connector SDK, RDR Reference, Routing Client SDK and Routing Rest Interface information.	Avaya Professional Services
Avaya Dynamic Routing Scripting Guide	This document includes the Decision Function and Strategy Script development information.	Web Administration - Technical End User

Support

Go to the Avaya Support website at http://support.avaya.com for the most up-to-date documentation, product notices, and knowledge articles. You can also search for release notes, downloads, and resolutions to issues. Use the online service request system to create a service request. Chat with live agents to get answers to questions, or request an agent to connect you to a support team if an issue requires additional expertise.

2. Dynamic Routing Overview

Avaya Dynamic Routing provides a single platform for omni channel decisions. Voice, email, chat, social media and other channels can use

centralized business rules configuration to send the customer to the next step.

Configurable Deployment Models

When you install Dynamic Routing, you can deploy different configurable models according to your requirements; deployment models such as:

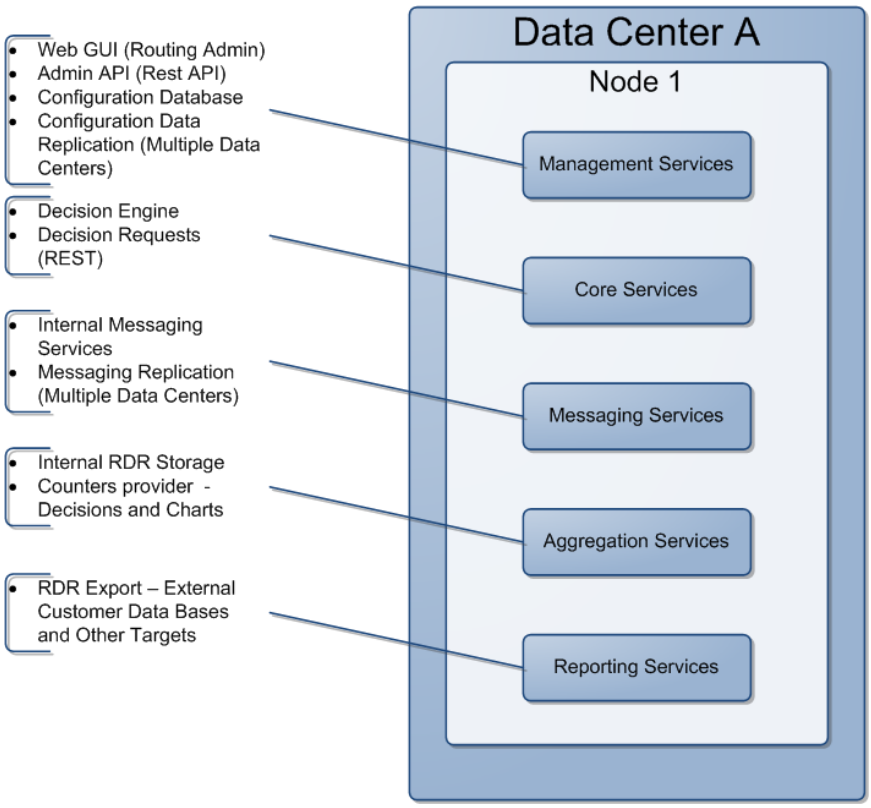
- Single Node - Single Data Center (1N - 1DC)
  - This model includes a single node running all the services, excluding services used to synchronize data between data centers
  - There is no High Availability/Disaster Recovery
  - It is recommended for laboratories or systems with low traffic (requests per second) and no HA requirements
- Single Node - Dual Data Center (1N - 2DC)
  - This model includes one node in each data center. The node hosts all the Dynamic Routing services, including the services to synchronize data between data centers.
  - Only Remote High Availability/Disaster Recovery is covered by this model
  - It is recommended for systems with low traffic (requests per second) and no local HA requirements
  - Supports one node failure with no outage
- Triple Node - Single Data Center (3N - 1DC)
  - This model is a subset of "Triple Node - Dual Data Center".
  - Consists of three nodes in a single data center.
  - This is the first step to building a "Triple Node - Dual Data Center", in which there are two "Triple Node - Single Data Centers" and configuring them to see each other.
  - Supports one node failure with no outage
- Triple Node - Dual Data Center (3N - 2DC)
  - This model has a total of six nodes
  - Provides full high availability and disaster recovery
  - It is recommended for medium to large and critical environments
  - Supports one node per data center failure with no outage
- Multiple Node - Dual Data Center (Custom)
  - This model provides high throughput, scalability, full high availability and disaster recovery
  - Can have nodes with just Management, Core, or many different combinations of services per node to achieve higher levels of throughput and high availability (maximum **four** Core services per data center).
  - It is recommended for large and critical environments that require high throughput and high availability

NOTE

The maximum number of Data Centers supported in the current version is **two** and the maximum number of nodes per Data Center supported in the current version is **five**.

3. Architecture

Feature Description



Overall Components

Dynamic Routing provides the following software services:

- Management Services that provide the tools and infrastructure for administration
- Core Services that offer the interfaces to request and process decisions
- Messaging Services that allow services to receive events and information needed for each decision
- Aggregation Services that collect data used by Core and other services
- Reporting Services that provide information to customer external tools
- CMS Connector Services that provide real time metrics from the CMS to Dynamic Routing Core

Management Services

The **Management Service** addresses administrative tasks and is composed of the following units:

- Config Store (configuration store)
- Routing Admin (**RA,** web application for DR3 administration)
- Admin API (exposes a REST web service interface to allow operations against the configuration data)
- Metrics data grid
- Monitoring (monitoring information, alarms)
- RDR persistence
- Audit Log record persistence

Core Services

The **CORE** service processes incoming decision requests quickly in real-time. The following components are included:

- Routing Core: contains the Metrics Service (where Connectors send metrics), and the Routing Service (with the Decision Engine)
- DR Decision API (a.k.a. Routing REST PU): exposes a REST web service interface to request a decision from the Decision Engine

Dynamic Routing Light

The Light deployment is an alternative for scenarios where Dynamic Routing is only required to provide decisions, without the messaging layer, reporting database, counters, etc. Even without some components, the software is still able to select different destinations based on ACD metrics, do percentage allocation based on statistical information, provide experience selection decisions and other features.

Regarding architecture, Dynamic Routing Light can be deployed in one single server or in up to 5 (five) nodes / 2 (two) data centers, providing Local and Geo redundancy. The biggest advantage is the small footprint, reducing the amount of cpu, disk space and memory usage.

Dynamic Routing Light - Example running on two data centers, one node per dc

Dynamic Routing Light vs. Full Featured Comparison

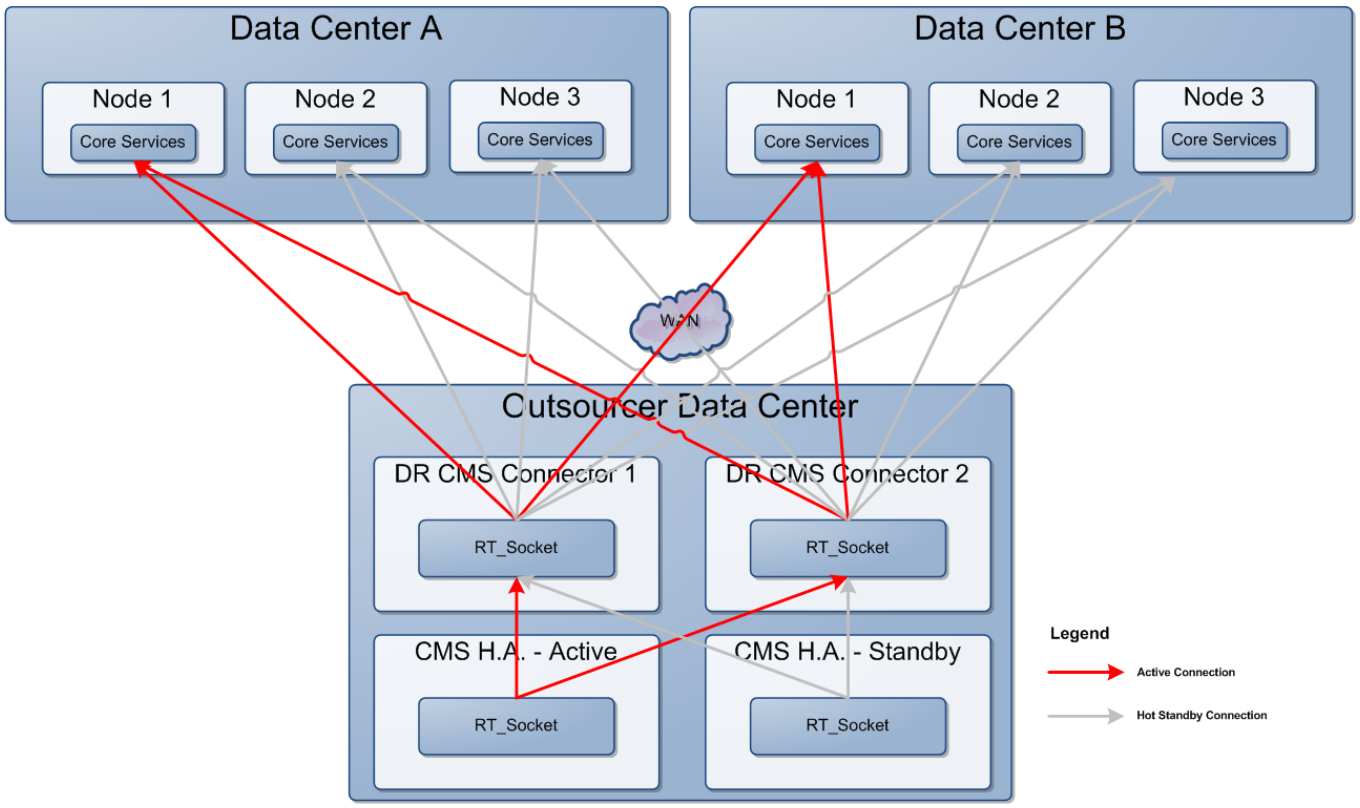
	Dynamic Routing Light	Dynamic Routing Full Featured
Local High Availability	Yes	Yes
Geographical High Availability	Yes	Yes
Deployment with one or many nodes/data centers	Yes	Yes
Destination Selection	Yes	Yes
Experience Selection	Yes	Yes
Decisions using ACD Métrics	Yes (Adding CMS Connector	Yes (Adding CMS Connector
Percentage Allocation based on current traffic	Yes	Yes
Percentage Allocation based on cummulative day traffic	No	Yes
RDR (decision records) in file system	Yes	Yes
RDR (decision records) in database (internal or extenal)	No	Yes
Web counters showing entity usage	No	Yes
Accept external software getting decisions from messaging services	No	Yes
Reduced Footprint	Yes	No
Routing Requests via REST Interface	Yes	Yes
Admin API (REST)	Yes	Yes
Ready for external real-time dashboards	No	Yes

CMS Connector

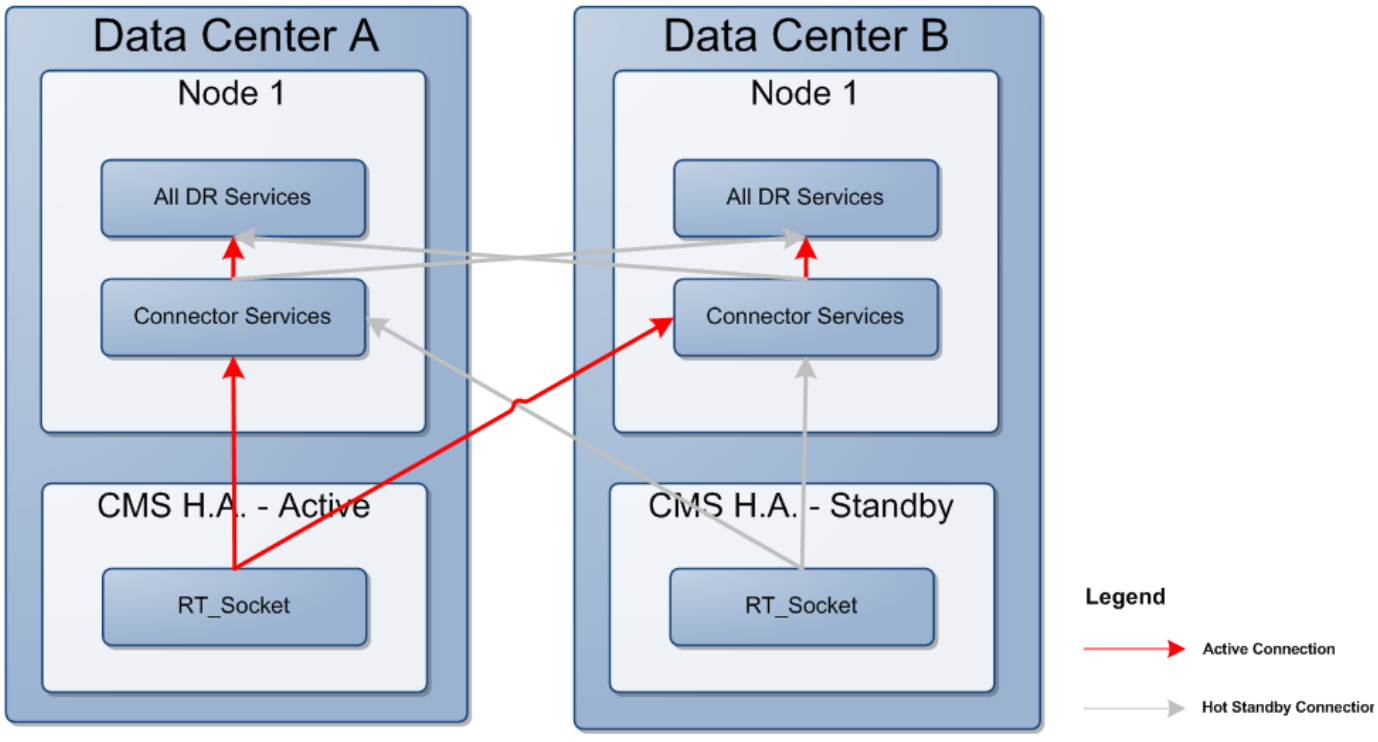
CMS Connector is the software that receives the metrics from the CMS and provides the information to Dynamic Routing. The connector has the ability to pre-process the CMS feed in order to save network consumption by compressing the feed received from CMS before sending it to Dynamic Routing Core Services. When network consumption between CMS and DR3 is a concern, the CMS Connector software should be installed in a separate node near the CMS.

A CMSC will feed one CORE per data center; the remaining COREs will be automatically synced.

This software can be co-resident in the DR node (small deployments) or run in a separate node.



Full High Availability - CMS Connector separate node



CMS Connector Co-Resident

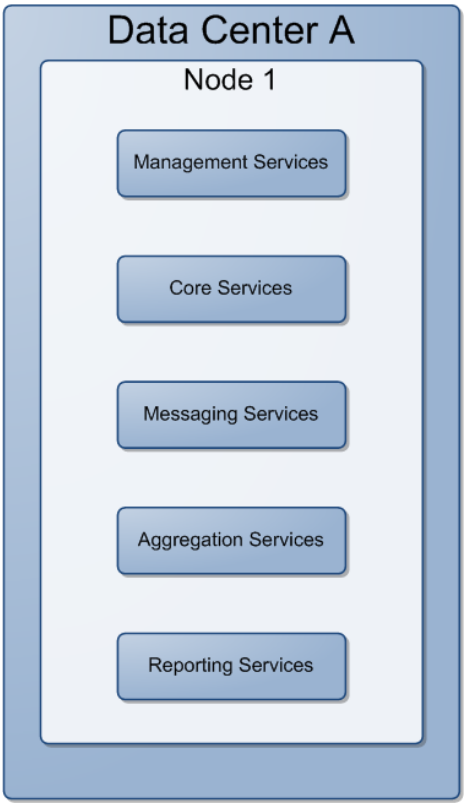
NOTE

The CMS Connector sizing depends on the number of CMSs, ACDs, Agent Groups and the feed refresh time. The default configuration expects the CMS to be sending a feed to Dynamic Routing every 10 seconds. If a higher number is configured, some changes on the Web Administration should be done, the details of the changes are described in the Dynamic Routing Integration Guide.

Deployment Model Architecture Details

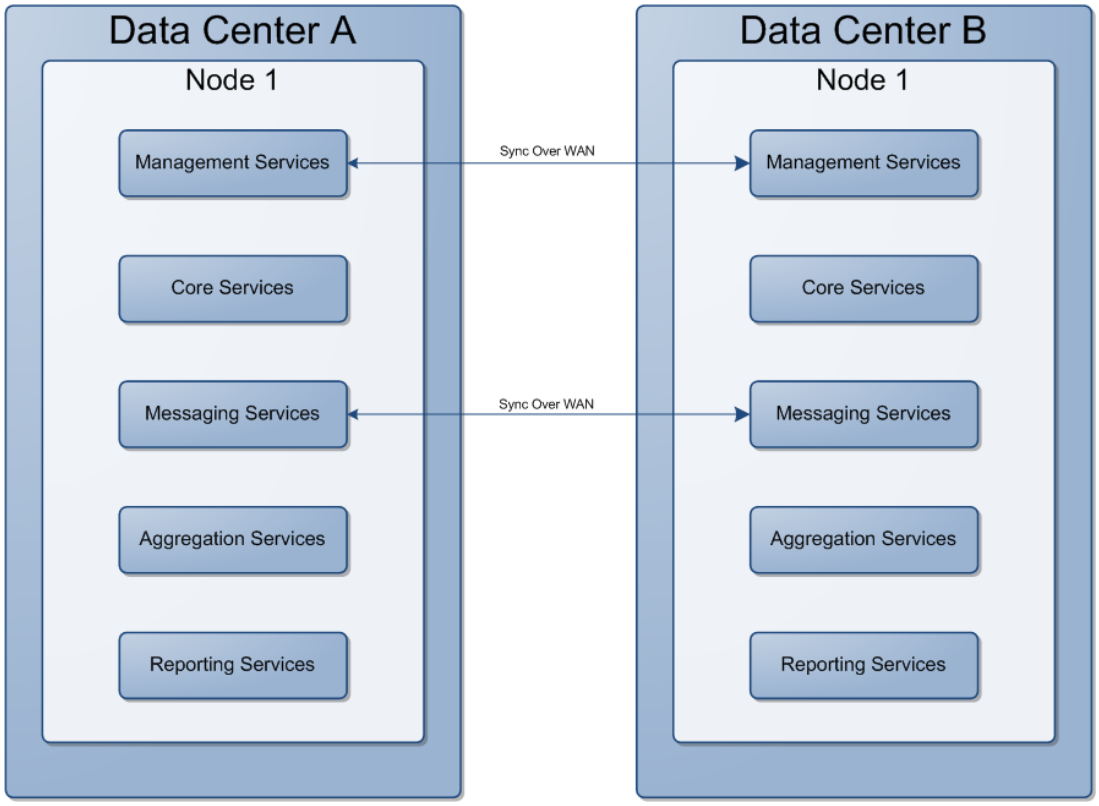
This section shows some different Dynamic Routing deployment models. Dynamic Routing is very flexible in terms of architecture. The installation process installs all the Dynamic Routing software in each node, while the deployment model or architecture is defined by the Dynamic Routing Cluster Manager Tool, after the installation. Some of the common architectural models are in the sections below.

Single Node - Single Data Center Model (1N - 1DC)



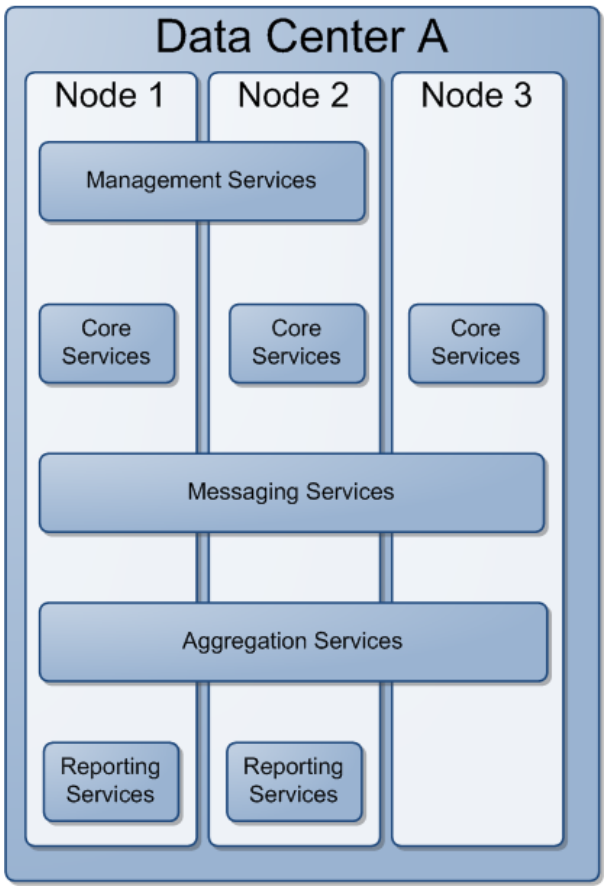
Deployment Overview - 1N-1DC

Single Node - Dual Data Center Model (1N - 2DC)



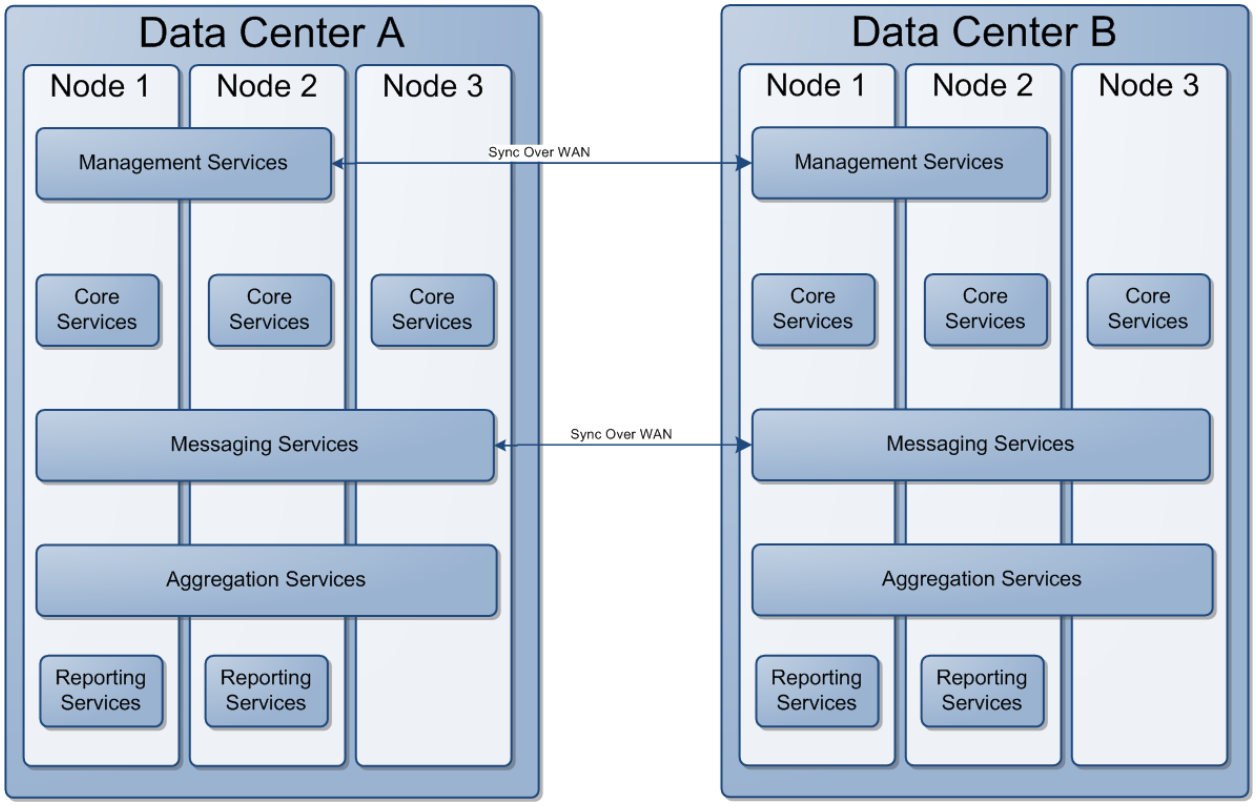
Deployment Overview - 1N-2DC

Triple Node - Single Data Center Model (3N - 1DC)



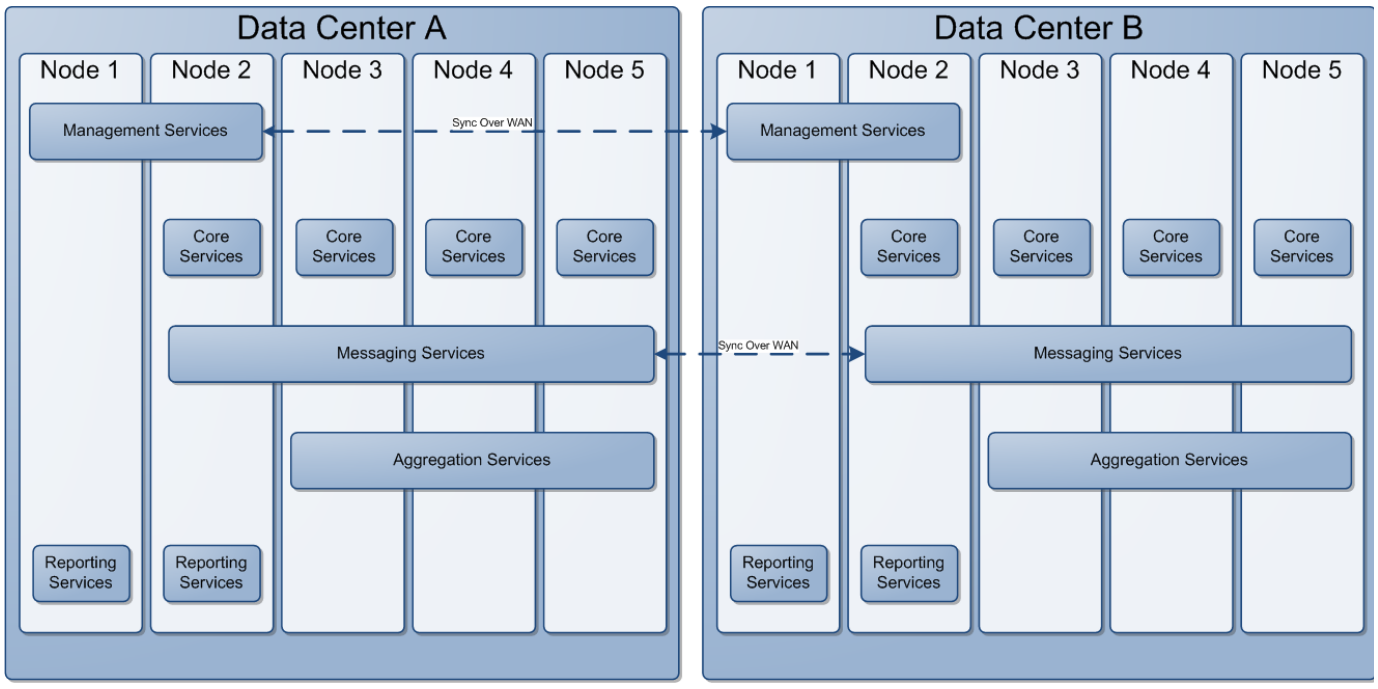
Deployment Overview - 3N-1DC

Triple Node - Dual Data Center Model (3N - 2DC)



Deployment Overview - 3N-2DC

Multiple Node - Dual Data Center Model (xN - 2DC)



Deployment Overview - xN-2DC

IMPORTANT: **For customers upgrading from DR 3.0 or DR 3.1**, who typically deploy a medium cluster, they will need to add two additional nodes, to map to the 3N - 2DC deployment model. Contact Avaya to resize the cluster.

4. Failover Best Practices

Failover Overview

When designing a Dynamic Routing system, you must take into consideration the possibility of equipment failure. You must also consider the failure of nodes that Dynamic Routing depends on; for example, CMS and other metrics providers. Typically, Dynamic Routing systems are designed to withstand the failure of any single node wherein, you must have enough nodes of each type so that the system can continue to process requests at full capacity even if one node goes out of service. Such systems are said to be highly available. Some customers might implement a second complete Data Center at a different location. The purpose of the second Data Center is to handle cases where some large-scale problem such as fire, flood, or power outage takes all the nodes in the original system out of service at the same time. This method is known as disaster recovery.

High Availability

Dynamic Routing provides the option to create highly available systems. You must have the required number of nodes. This section explains various high availability instances in the Dynamic Routing system.

Management

For high availability support, you must have the Management Services in more than one node.

Requests Processing

To process requests, the Core Services, Messaging Services and Aggregation Services must be installed in more than one node for high availability support.To provide load balancing and failover of decision requests, an external load balancer is required. This load balancer should deliver the requests to the nearest Data Center avoiding broken Cores. A keep alive query should be configured in the load balancer to ensure the Core availability.

Real Time Metrics Processing

CMS Connectors (or any other 3rd party ACD metrics collector) should be installed in more than one node to provide high availability support. The number of nodes depends on the number of systems that will send metrics to Dynamic Routing.

CMS

CMS HA offer is required for high availability support.

5. Environmental Requirements

Hardware

Dynamic Routing can be installed on:

- Avaya Provided Hardware (bundled offer)
- Customer Provided Hardware and operating system
- Customer Provided Virtualized Hardware and operating system

- Customer Provided Virtualized Hardware for OVA - Avaya pre installed operating system and software for VMWare 5.5/6.0 environments

Avaya Provided Hardware

The hardware specification should be provided in the scope of work.

Customer Provided Hardware (Virtual or Physical)

Avaya Dynamic Routing requires different resources based on traffic and configuration complexity:

- Traffic
    - Low - volume of Dynamic Routing Requests with BHCC < 50,000
    - High - volume of Dynamic Routing Requests with BHCC >= 50,000
- Configuration Complexity
    - Based on the number of Agent Groups with Metrics and Segmentation Tables
        - Agent Groups:
            - Simple Configuration: number of Agent Groups with Metrics < 500
            - Complex Configuration: number of Agent Groups with Metrics >= 500
        - Segmentation Table
            - Simple Configuration: number of Segmentation Tables < 30
            - Complex Configuration: number of Segmentation Tables >= 30

If any one answer to the above questions is High Traffic or Complex Configuration, the sizing should be made using the "High Traffic/Complex Configuration" option.

Deployment Type	Traffic/Configuration Complexity	#CPUs and Clock speed	RAM	Disk
Dynamic Routing Light	Low Traffic/Simple Configuration	4 (2.9GHz or higher)	6 GB	80 GB
	High Traffic/Complex Configuration	4 (2.9GHz or higher)	8 GB	80 GB
Single Node - Single Data Center (1N - 1DC)	Low Traffic/Simple Configuration	4 (2.9GHz or higher)	16 GB	120 GB
	High Traffic/Complex Configuration	6 (2.9GHz or higher)	32 GB	160 GB
Single Node - Dual Data Center (1N - 2DC)	Low Traffic/Simple Configuration	4 (2.9GHz or higher)	16 GB	120 GB
	High Traffic/Complex Configuration	6 (2.9GHz or higher)	32 GB	160 GB
Triple Node - Single Data Center (3N - 1DC)	Low Traffic/Simple Configuration	4 (2.9GHz or higher)	16 GB	120 GB
	High Traffic/Complex Configuration	6 (2.9GHz or higher)	32 GB	160 GB
Triple Node - Dual Data Center (3N - 2DC)	Low Traffic/Simple Configuration	4 (2.9GHz or higher)	16 GB	120 GB
	High Traffic/Complex Configuration	6 (2.9GHz or higher)	32 GB	160 GB
Five Nodes - Dual Data Center (5N - 2DC)	High Traffic/Complex Configuration	6 (2.9GHz or higher)	32 GB	160 GB
Multiple Node - Dual Data Center (Custom)	Should be analyzed by Avaya Professional Services			

Note for Virtual Machine Environments:

- do not over-commit virtual memory.
- reserve memory at the virtual machine level.
- hyper-threading should be enabled.
- vCPU should have clock higher than 2.9GHz and can not be shared (reserved).

LAN Requirements

Connectivity Requirements

Dynamic Routing requires a 1000 Base-T LAN full duplex network switch connection so that Dynamic Routing nodes can communicate with each other and with any other nodes. Each node in your Dynamic Routing system must be able to connect to all the other nodes in the system using the host names of the other nodes. You must use a Domain Name Service (DNS) or have an internal host table for this purpose.

Node Name Requirements

Each Dynamic Routing node must have a static IP address and a host name. Each host name must be unique and cannot contain a . (period) or a (space) character.

Port Matrix

Port matrix for external firewalls:

From	To	Descriptions	Default Ports
Decision consumer systems (IVR, Chat, Web, etc.)	Nodes with Core Services	Rest Interface	TCP - 80/443
Admin API clients	Nodes with Management Services	Rest Interface	TCP - 80/443
Web Administration users	Nodes with Management Services	Routing Admin (Web Interface)	TCP - 80/443
Nodes with Messaging Services	Nodes with Messaging Services	Internal messages traffic	TCP - 2181, 3191, 4191, 9092, 9093
Nodes with Aggregation Services	Nodes with Aggregation Services	Counters aggregation traffic	TCP - 9200, 9300
All Avaya Dynamic Routing Nodes	All Avaya Dynamic Routing Nodes	Internal data sync	TCP - 4174, 7103, 7104-7124, (additional dynamic ports)
CMS	Node with CMS Connector	Metrics feed	TCP - 7200
Support Team Laptops and/or Desktops	All Avaya Dynamic Routing Nodes	Administration	TCP - 22, 8099, 80
All Avaya Dynamic Routing Nodes	WebLM/System Manager	Licensing	TCP - 52233 (or 8443 depending on the configuration)
All Dynamic Routing Nodes	System Manager	SNMP Alarms	TCP/UDP - 10161, 10162

Dynamic Routing provides a script to configure the internal Linux firewall. This scripts enables the iptables service configuring the specific rules for this service. For more information about this configuration, please read the Dynamic Routing Cluster Management Guide.

External Load Balancer

To spread requests across all the nodes, an external load balancer is required. The customer should provide a load balancer that addresses high availability by sending traffic to the local DR3 (same Data Center) and remote DR3 (over WAN to the other Data Center). Load balancer needs to manage traffic for:

- REST Routing Requests across the CORE services
    - Port 443
    - Virtual IP to Nodes with Core Services
    - Work as Round Robin Load Balancer (Recommended)
        - Can be also configured as Failover if required by customer
    - Session persistence is not required
- Routing Admin and REST Admin API access across the MGMT services
    - Port 443
    - Virtual IP to Nodes with Management Services
    - Work as Failover, sending all requests to the same server, (Recommended)
    - Session persistence is required

IMPORTANT:

Depending on the deployment type, the load balancer should disable the entire Data Center after one or two servers fail, even having more servers up in the same Data Center. Please, check the High Availability/Disaster Recovery chapter of this document to plan the correct strategy

for each deployment type.

Load Balancer Service Health Check

Core Services

- Request: <GET> http://serverIP/dr-decision-api/heartbeat
    - Response
        - Code: 200OK
        - HTML Body: OK

Note: if http is disabled on the server, use https.

Management Services

- Request: <GET> http://serverIP/dr-admin/heartbeat
    - Response
        - Code: 200OK
        - HTML Body: OK

Note: if http is disabled on the server, use https.

Web Browser Support

The following web browser is supported for the Routing Administration web tool:

- Chrome – Version 34.X (or later – recommend latest version)

6. Interoperability

Product Compatibility

Product	Version
CMS	16 and newer versions
CMS RT_SOCKET	4.3.23 and newer versions

Note

Dynamic Routing has no interaction with any Avaya products via proprietary protocols.

Operating System Support

The supported operating systems list could be found in the Dynamic Routing Installation Guide.

External RDR Database

The RDR DB contains call detail records which can be used for Reporting and Troubleshooting. The customer should provide an up and running database instance to receive the records from Dynamic Routing.The supported databases are:

- PostgreSQL 9.6
- MS-SQL Server 2012 or newer versions
- Oracle 11g or newer versions
- MySQL 5.6.X or newer versions

More information about RDRs can be found in the Dynamic Routing Integration Guide.

7. Security

Network Time Protocol

Dynamic Routing uses Network Time Protocol (NTP) to synchronize the time across the cluster. NTP configuration is a REQUIREMENT for Dynamic Routing.

Linux Hardening

The general distribution of Red Hat Enterprise Linux includes the Red Hat Package Management (RPM) modules for most, if not all, possible Linux configurations. These distributions include a complete development suite, complete graphics support for the X Windows System, numerous development debugging tools and a variety of network administrative tools. For Dynamic Routing, only a small portion of the distributed RPMs is needed. When distributions of Red Hat Enterprise Linux grow to include more RPM modules, the relative percentage of RPMs needed by Avaya applications will be even smaller.

Aside from making the software product file images smaller and more manageable, the removal of unneeded RPM modules makes Linux more secure.

To make Linux even more secure, you must configure Linux to log security-related events, if possible. You must log the following events:

- Account privilege changes
- Logins and logouts
- System configuration changes
- Additions, modifications, or deletions of installed packages
- Activities of root or administrative logins

Secure Shell

Secure Shell (SSH) is a program that includes capabilities for doing the following:

- Logging in to another computer over a network
- Executing commands on a remote computer
- Moving files from one system to another

Secure Shell provides strong authentication and secure communications over untrusted networks.
Secure Shell provides a more secure way to connect to remote systems than protocols such as telnet and FTP. Unlike telnet and FTP, users can connect to remote hosts over an encrypted link with SSH. Encryption protects against interception of clear text logins and passwords.

Antivirus Software

You can install antivirus software on the Dynamic Routing nodes. The type of antivirus software used and the method of installation depends on the requirements of your company. Make sure you use on-demand scanning, where scans are run at scheduled intervals. Do not use a message-scanning method, such as on-access scanning as that can impact the performance of Dynamic Routing. If your antivirus software runs whenever a file is changed, it can have a negative impact on Dynamic Routing performance.

In addition, some virus scan applications automatically start scanning at system startup by default.

Disable this feature because it interferes with the time that it takes for a Dynamic Routing system to come back online after a reboot.
You must administer the antivirus software as follows:

- Scan the hard disk daily during off-peak hours, or at least once per week. Scans can be run on all Dynamic Routing nodes simultaneously. Do not schedule the antivirus scan at the same time as a backup.
- Schedule antivirus definition updates to occur automatically at least once per week. The updates must occur before the next scheduled scan time to ensure that the latest data files are used during the scan. Do not schedule updates to occur during a virus scan.
- If the antivirus software detects a virus, it must attempt to clean the file. If the attempt fails, the software must move the infected file to a different directory on the node.

8. Licensing

A license file is required for Avaya Dynamic Routing operation as it permits the enablement of the product. The Avaya Dynamic Routing license file is distributed separately in an email from Avaya and should be installed in an external WebLM server (typically hosted on the Avaya System Manager).

Appendix A - Glossary

Term / Acronym	Description
AAEP	Avaya Aura Experience Portal
ACD	Automatic Call Distribution
ASM	Avaya Session Manager
BU	Business Unit, or Line of Business (LOB)
CM	Avaya Communication Manager
CMS	Avaya Call Management System
CMSC	Avaya CMS Connector (part of overall Dynamic Routing solution)
CORE	Dynamic Routing service processes incoming decision requests quickly in real-time
DC	Data Center. Location that hosts the Dynamic Routing nodes.
DF	Decision Function. It is the top level of DR3 scripting.
DoW	"Day of Week". Refers to some configuration parameters which can vary across different days within a week. The most common case being different for weekdays than weekends.
DR3	Avaya Dynamic Routing version 3
ED	Avaya Engagement Designer. Workflow designer product which handles customer interactions.
EDP	Avaya Engagement Developer Platform. Next generation product to develop communications and collaboration services.
HA	High Availability
HW	Hardware
ICR	Intelligent Customer Routing. Avaya routing solution on AAEP.
LOB	Line of Business or Business Unit (BU).
MGMT	Dynamic Routing service addresses administrative tasks
MS	Metrics Service: one of the key components in DR3 CORE. Allows different Connectors to upload Destination metrics into Dynamic Routing Metrics data grid.
NIC	Network Interface Card

OVA	Open Virtualization Format. File extension of pre-built virtualized servers.
RA	Routing Admin. Web interface to manage Dynamic Routing.
RDR	Routing Decision Record. The record used to track the details about each decision processed by Dynamic Routing.
REST	Representational State Transfer. Web service definition.
RS	Routing Service: one of the key components in DR3 CORE. Receives Decision Requests from clients, and after processing each one returns a response with Result Code and a Selected Destination (among other data).
SMgr	Avaya System Manager. Configuration platform for many Avaya products.
SV	Script Variable. Each one of the parameters defined in the Strategy Scripts, for users to adjust their Values.
ToD	"Time of Day". Refers to some configuration parameters which can vary across different times within a day (typically in hours:minutes (hh:mm) intervals defined by a "start time" and "end time").
vCPU	Virtualized CPU.
vMEM	Virtualized RAM Memory

Appendix B - High Availability and Disaster Recovery

Depending on the deployment model, Dynamic Routing offers different levels of High Availability. Dynamic Routing was designed to support failure of one or more servers, depending on the deployment model. This chapter will describe the scenarios and expected behaviors for Triple Node - Dual Data Center (3N - 2DC) deployment model with a pair of CMS Connectors receiving data from a CMS HA.

In general, the Triple Node - Dual Data Center deployment, if designed for full High Availability support, supports the following scenarios with no loss of capacity:

1. One server per Data Center
2. Entire Data Center

Basically, in this deployment model, having 2 nodes (servers) running in a single Data Center is enough to have the routing decisions, counters and all features provided by Dynamic Routing. The customer provided load balancers are an important piece of the disaster recovery scenarios, managing the traffic to specific nodes in a specific data center.

The following table illustrates the failure scenarios and expected behaviors:

Scenario	Dynamic Routing Expected Behavior	Customer Provided Load Balancer Expected Behavior	Comments
Entire Data Center fails	No impact	The load balancer should identify that services are down in one Data Center and send the entire Dynamic Routing traffic to the other, up and running Data Center.	After the load balancer detects the failure and disables the problematic DC, the Dynamic Routing end user will be not be impacted. Dynamic Routing is an active/active architecture. The load balancer is the key piece to moving all the traffic to the second Data Center that is already up and running.
One Node in one Data Center fails	No impact	The load balancer should identify the Node (server) that is down and remove this target from the virtual IPs list.	The three Nodes per Data Center architecture has two nodes running the Management Services. One of these nodes is running in Primary mode and the other one in Backup mode. If the Node that goes down is the Management Services node that is in Primary mode, the system can face up to 30 seconds of instability. During this time, the second Management Services node, in the same Data Center, will become primary restoring the system health.
Two Nodes in the same Data Center fail	No impact	The load balancer should remove the entire Data Center from the virtual IPs list. When two nodes of the same data center fail, the Data Center should be considered failed.	The three Nodes per Data Center architecture is designed to support the failure of one Node per Data Center. The failure of two nodes in the same Data Center behaves like an entire Data Center failure, having no outage from a Dynamic Routing perspective. The load balancer is the key piece to moving the traffic to the second Data Center that is already up and running.

Network split (split brain) (no communication between the Data Centers)	No Impact	The load balancer of each Data Center will consider only the local Data Center up.	There is no impact, each Data Center will work as a standalone Data Center and after the network is back, Dynamic Routing will reconcile the data from the two Data Centers. The configuration will be reconciled considering the timestamps to solve conflicts, if the same record was changed in both Data Centers during the split brain situation. The RDRs of each Data Center will be safe in each RDR Database instance. In case of more than one hour of failure, the RDR databases will not have the information consolidated from both Data Centers, just the local RDRs (this is only during the failure).
One CMS Connector fail	No impact	N/A	N/A
Two CMS Connectors fail (or no feed from CMS)	Impact on the decisions	N/A	Decisions that need metrics from the CMS will be impacted. If both CMS Connectors fail, there are no metrics available for Agent Groups and all decisions (Strategy Scripts) that need metrics are impacted. Having a Strategy Script that considers this scenario can help to minimize the impact. As an example, define a default route when no metrics are available or change from making decisions based on metrics to using percentage allocation in case of no metrics. This impact can be mitigated with Strategy Script code.