Avaya Replacement Blueprint

Reference Architecture

Authors

Gordon Bell

Tony Simek

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GENESYS

1   Introduction

Genesys recognizes that moving from a legacy voice platforms such as products from the Avaya portfolio require a thoughtful approach.   The purpose of this Architecture Blueprint is to document how to replace Avaya components within a customer's contact center.   It provides a prescriptive list of components (both Genesys and 3rd party) that should be included in the solution.   It also provides guidance for implementing and deploying the solution.

1.1   Document Overview

The document contains the following sections:

1: Introduction

2: Solution Overview

3: Oceana and Breeze Considerations

4: Avaya ACD Replacement

5: Outbound Dialer Replacement

6: IVR Replacement

7: Definitions and Acronyms Described

1.2   Intended Audience

Genesys welcomes the use of this document for solution consultants, partners and customers considering or involved in an Avaya replacement scenario.

The information provided in this document should meet the needs of pre-sales and provide appropriate general guidance for professional services. This document is not intended to provide configuration level information for professional services.

Describing system and solution architectures can be difficult as there are multiple audiences each with different expectations.   This document is intended for multiple audiences with some chapters being more interesting to some readers than others.

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2   Solution Overview

This solution focuses on replacing one or more Avaya contact center components with Genesys software. It is based on several successful customer transformations. A complete transformation into an all Genesys solution is documented in the **ACD REPLACEMENT BLUEPRINT.**

The typical transition scenarios that have occurred are:

- Migration of voice users from Avaya PBX to Genesys SIP Server.
- IVR Update from premise based Avaya or Legacy Nortel IVR using Genesys GVP.
- Replacement of Avaya outbound dialer using Genesys Outbound.

Although these scenarios require continued support of various Avaya components within the environment (typically the PBX) until the customer decides to replace them, it should be noted that Genesys is able to replace 100% of the components leveraged in an Avaya solution.   This removes dependencies on Avaya, simplifies the solution, and permits your contact center to experience a modern platform without the typical limitations of a legacy solution.

Each of these scenarios is discussed in detail in subsequent sections. The rest of this section will focus on describing the Avaya contact center components that need to be replaced or adapted to.

2.1   Avaya Contact Center Overview

A contact center consists of several components. These common components include ACD, IVR, and Outbound.   Avaya's solutions to a contact center revolve around integration into their PBX (CM and CS1000).   Additionally, some Avaya environments make use of the Aura Session Management products at the edge of the enterprise which will be described fully later in this document.   The following diagram depicts a typical Avaya contact center solution.
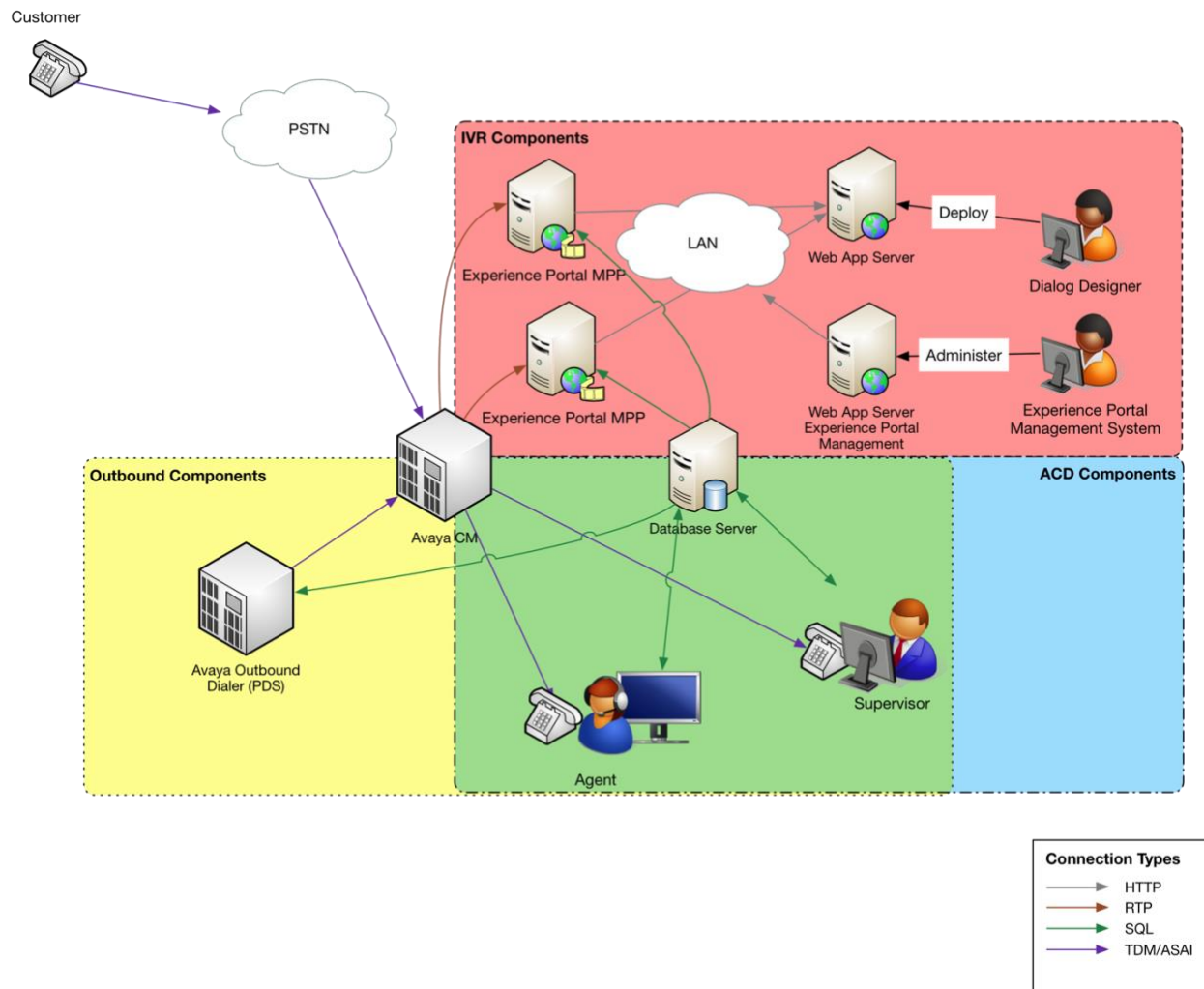
Figure 1: Avaya Contact Center

The diagram depicts a legacy Avaya Communication Manager (CM) PBX which serves the contact center agents and supervisors (in addition to other enterprise users). CM also functions as an integral

component of the IVR with the addition of Media Processing Platforms and other IVR application components.   An Outbound contact solution can also be created using a dialer with CM.

In 2009, Avaya purchased Nortel's enterprise solution business. This included their PBX and contact center business. Legacy Nortel (sometimes called Avaya Blue) products are also candidates for replacement by Genesys components.   Legacy Nortel contact centers have a similar architecture to that depicted above, replacing CM with a CS1000.

2.2   Avaya Components

There are many components that make up an Avaya contact center. The following section lists some of the products and solutions that may be replaced or integrated with Genesys products. For convenience, they've been separated based on their lineage (Avaya Red and Avaya Blue/Nortel).

2.2.1   Avaya Red Components

Product	Solution	Comments
Communication Manager	ACD, IVR, Outbound	CM is Avaya's premier PBX. Depending on its deployment options, CM can house gateway components to interface with a PSTN, and Avaya Call Classification Cards used for CTI predictive Dialing (like Predictive Contact CTI). Solutions such as Avaya Predictive Dialing (HW) and Avaya Proactive Manager (POM) use their own internal Call Classification resources
Contact Center Elite	ACD	CC-Elite is a version of CM that is enabled for contact center agents and ACD functionality.
Avaya Aura Contact Center	ACD	AACC was originally a Nortel solution. It was adapted to work with SIP and Session Manager. Quality and performance issues have hampered it adoptions – CC-Elite is usually recommended for large enterprises.
Application Enablement Services	ACD, IVR, Outbound	AES provides the programmatic interfaces to CM and is required for most integration. Genesys T-Servers typically require an AES with ASAI and TSAPI licenses activated.
SIP Enablement Services	ACD	SES is the obsolete SIP interface for CM.

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Avaya Breeze	ACD	ACD Avaya Aura Integration framework providing snap-in extensions to interface with enterprise assets.
Avaya Oceana	ACD	Avaya's latest state machine for customer journey management. Not typically seen in the enterprise, this represents Avaya's take on context aware journey management typically provided by Genesys.
Session Manager	ACD, IVR, Outbound	Session Manager is a SIP Proxy & Registrar for modern CM & CS1000 deployments using SIP. See below for more information.
Voice Portal	IVR	Voice Portal was Avaya's IVR product. It has been superseded by the Avaya Aura Experience Portal. It supports VXML and CCXML applications. Media Processing Platform (MPP) provides the media resources for the Voice Portal Solution Voice Portal Management System administers the Voice Portal system.
Avaya Aura Experience Portal	IVR, Outbound	Experience Portal supersedes the Voice Portal IVR. In addition to IVR capabilities, it also supports SMS, mail, fax and Outbound Assisted and Automated (Preview, Automatic, Predictive).
Dialog Designer	IVR	Design tool for developing IVR application with Voice Portal
Avaya Orchestration Designer	IVR	Design tool for developing IVR applications for Experience Portal. Supersedes Dialog Designer
Avaya Proactive Contact	Outbound	Proactive contact is Avaya's outbound solution, previously known as the Predictive Dialing System. It makes outbound calls based on campaigns and transfers successful calls to agents. The solution can either be software based, using Avaya's CTI interface to CM for dialing or it can use the PG230 rack-mounted hardware dialer.
PG230 Proactive Contact Gateway	Outbound	Rack-mounted hardware dialer used with the Avaya Proactive Contact solution.

Proactive Outreach Manager (POM)	Outbound	Proactive Outreach Manager is Avaya's latest outbound campaign management software. In addition to outbound dialing, it supports SMS and email campaigns as well as video calls. It integrates with the Experience Portal and CC-Elite.
Call Back Assist (CBA)	ACD, IVR	Avaya Call Back Assist is an Avaya Experience Portal Application used to offer customers in queue the possibility of being called by the CC agent as soon the agent become available. It primarily uses Agent First dialing (trigger the agent and then call the customer) and it allows immediate and scheduled callback. It also offers web service to allow a customer on a website to request a call back
Intelligent Customer Routing (ICR)	ACD, IVR	Avaya Intelligent Customer routing is an Experience Portal application they is used primarily in two different way: ● Acts as a load balancer between multiple ACDs (node selection) for large Voice contact center customers looking to better manage a virtual contact center based on multiple (2+) CC elite ACDs ● Acts in a single ACD system to provide personalized wait treatment based on Self Service Application.
IP Office*	ACD, IVR	IP Office is Avaya's SMB PBX. It is designed for a small number of users. IP Office customers aren't relevant to these displacement discussions and would best be addressed by either one of the Genesys cloud offerings or Business Edition Premise.
Outbound Contact Express*	Outbound	Outbound Contact Express works in conjunction with IP Office to add outbound capabilities to a small operation. It is out of scope for this blueprint.

Table 1: Legacy Avaya Products

2.2.2 Avaya Blue Components

The following table lists the Avaya "blue" or legacy Nortel products that are relevant to this document.

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Product	Solution	Comments
CS1000	ACD, IVR, Outbound	Nortel's legacy enterprise PBX. Avaya maintains and supports the CS1000; it has integrated it into its Aura SIP environment.
Nortel Contact Center	ACD	The Nortel Contact Center solution integrates with the CS1000 to provide ACD and routing capabilities. It ormed the basis for the AACC.
Media Processing Server 500 & 1000	IVR	The MPS systems provide IVR capabilities and can be integrated with the CS1000.
BCM	ACD	BCM was Nortel's SMB telephony system. After acquisition, it was replaced by IP Office. Similar to IP Office, BCM is outside the scope of this document but could be considered a target for cloud or Business Edition Premise as a replacement.
Nortel Meridian	ACD	Early Nortel PBX that evolved into the CS1000.

Table 2: Legacy Nortel Products

2.2.3 Session Manager

Avaya built the Session Manager to replace its SIP Enablement Services (SES) and attempt to develop a SIP ecosystem. Session Manager can act as a SIP Proxy, Registrar and gateway to the Avaya infrastructure. Both CM and CS1000 have been integrated with Session Manager

SES is currently EOL. If a customer still has an SES in place, they may also have an old infrastructure (including CM) and are probably being pressured by Avaya to upgrade all components and add Session Manager. These customers may be good candidates to move to a Genesys SIP solution, especially for the Contact Center agents.

The following diagram depicts a generalized view of Session Manager within an "Aura" deployment. Avaya Session Managers make up the "Aura Core" of the network and can integrate numerous CM and CS1000 PBXs. In addition, it can coordinate the SIP traffic to other components in the network including Voice Portal/Experience portal for IVR, other Media Servers (for potential voice conferencing), Voice Mail systems as well as other 3rd party SIP based applications.

Session Manager also functions as the SIP Registrar for all SIP endpoints in the network. Note that a CM is still required for the SIP endpoints and to provide CTI control to the phone.

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Connection Types

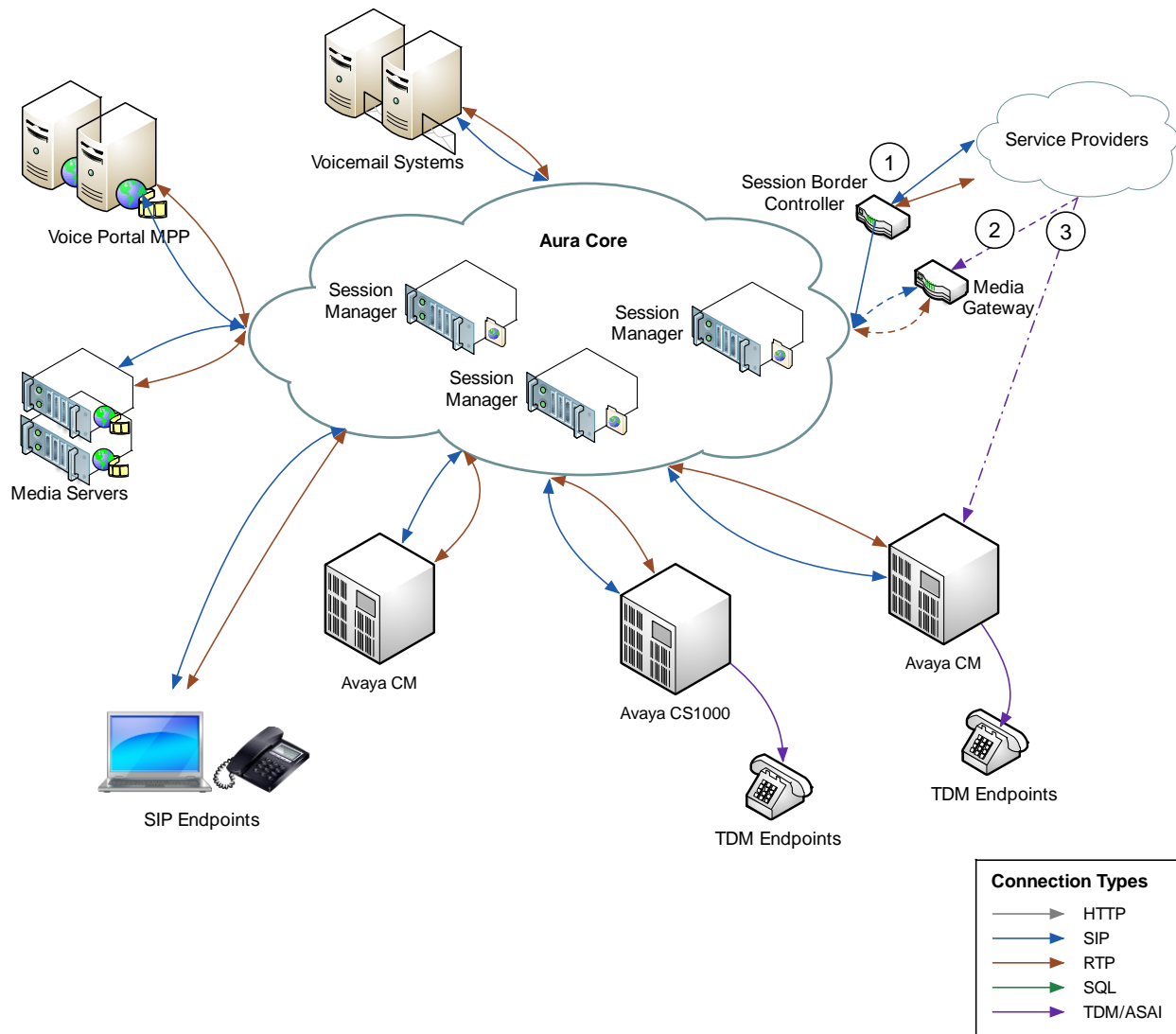|	
→	HTTP
→	SIP
→	RTP
→	SQL
→	TDM/ASAI

Figure 2: Session Manager Aura Network

There are three methods for connecting Session Manager to a Service Providers' telephony network:

1. SIP Trunk through a Session Border Controller (SBC) to the Session Managers.

2. TDM Trunk through a Media Gateway to the Session Managers

3. TDM Trunk through CM (using a CM's gateway capabilities where available) to Session Manager.

Note that Avaya prefers methods 1 or 2 although most customers seem to prefer 3, reusing their CM investment.

Genesys SIP Server and GVP have been integrated into Session Manager deployments. Where relevant, Session Manager integration will be discussed in addition to non-SM deployments.

2.3   Transformation Journeys

The solutions described in this document focus on replacing specific components of the Avaya infrastructure. However, there have been typical transformational journeys customers have taken that involve all of these solutions.

Adding or replacing media functions is a typical first step. Once SIP Server is in place, agents can be offloaded from the PBX:

- Add Genesys media servers to offload some of the IVR or PBX media processing (this is a licensed item called SIP Qualification and Parking and offers the benefit of an integrated treatment strategy with Genesys interaction routing designs)
- Expand to GVP for additional IVR applications
- As able, move groups of agents from the PBX to the SIP Server component of Q&P

In this model, GVP replaces legacy IVR infrastructure and SIP Server can support all contact center agents replacing the PBX in its entirety.
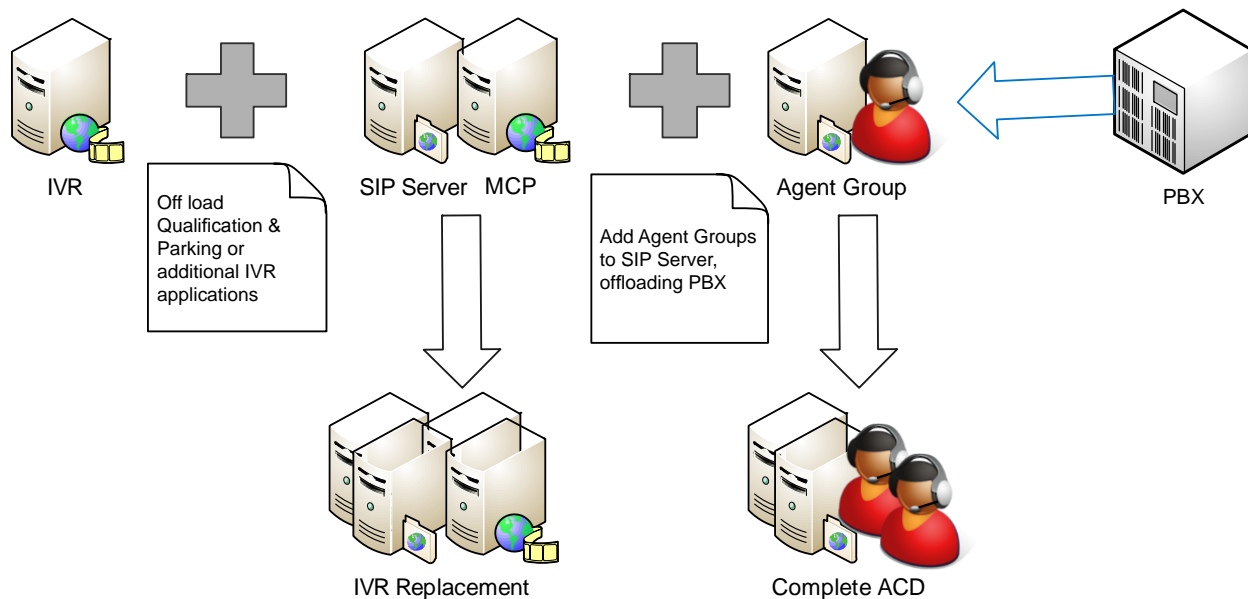

Figure 3: IVR Transformation Journey

The outbound transformation is very similar and complementary to the IVR journey:

- Augment or replace the legacy dialer with OCS, SIP Server and MCPs. Existing Outbound agents may continue to reside on the legacy PBX
- Move the Outbound Agents to SIP Server for the Outbound campaigns hosted on the Genesys system
- Start moving Agent Groups off of the PBX to SIP Server

● Start using the Genesys media resources (SIP Server & MCPs) to augment the legacy IVR

At this point, the Outbound and IVR transformational journeys merge. Eventually the system can replace the legacy Outbound, IVR and ACD
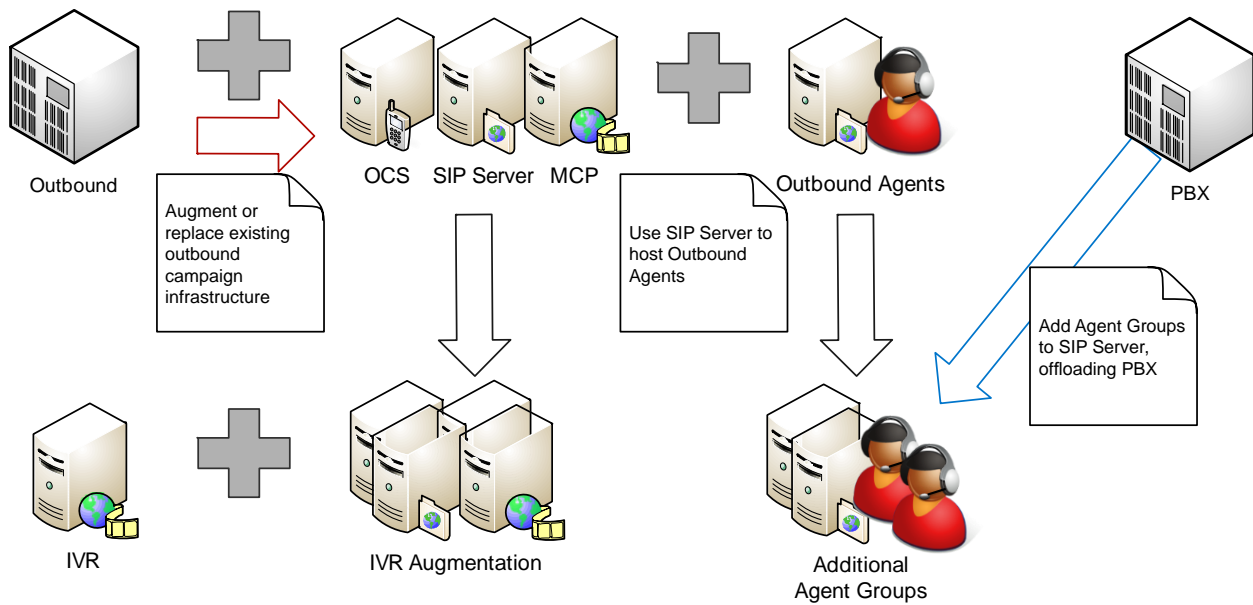

Figure 4: Outbound Transformation Journey

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3   Oceana and Breeze Considerations

Oceana and Breeze collectively make up Avaya's offering that is most consistent with the feature capabilities of Genesys.   It should be noted however that serious limitations exist for an Avaya customer attempting to leverage these elements from Avaya.   Oceana is not targeted for customers currently running Avaya Aura® Contact Center.   AACC and heritage NES customers are typically advised by Avaya to continue evolving to AACC 7.0.1 and later releases.   ***This type of product deployment is lacking and should be immediately countered with a Genesys voice and digital channels solution.***

Oceana requires CM and Elite for voice solution, and not compatible as an add on to either ACCS or IPOCC.

Oceana solution Limitations for High Availability

· Manual switchover only; No automatic switchover

· No call preservation when switching over to ESS.

· No support for partial switchover.

· Only Supports a single Disaster Recovery site (single ESS).

· CM switchover to ESS requires corresponding Oceana switchover.

· No cross-WAN AES link to ESS (no DMCC over WAN).

· No support for WAN outage scenario,

· Active- standby mode only; Active-Active mode not practical over a WAN.

· Loss of historical reporting data minimized within the current interval.

· Down time required while activating the secondary site.

· No position in queue preservation for non voice contacts.

· No CM configuration changes allowed while Disaster Recovery site is active

· Requires WAN delay to be <100ms

4 Avaya ACD Replacement

An Avaya PBX provides hundreds of features and addresses many enterprise unified communication needs that are not typically required for the contact center. Genesys SIP Server is targeted at the specific contact center requirements (although it has some interesting features for non-Agents as well).

Genesys has replaced or extended the Avaya PBX in the following scenarios:

- Older PBX is end of life and the Avaya upgrade is too expensive (often requiring rip and replace)
- Instability or quality issues with the PBX
- Adding more seats for contact center agents is costly
- Lack of Agent Desktop Features and cross channel data vs. Genesys (such as true skills-based routing, easy CRM integration, and Digital Channel integration)

Success factors to fully replace Avaya with SIP Server include simple enterprise voice feature requirements or the ability to have an autonomous contact center voice network.   If there is a large need for PBX enterprise or Unified Communications features, agents tend to move to SIP Server, but back office workers continue to work on the PBX. Customers can use T-Server integration or Smart Link for routing to back office workers as required.

Some customers (mainly larger ones) tend to divide CC and UC into two different Communication Manager Systems. This is usually done to avoid issues in management, upgrades, etc. In these cases, the migration to SIP server will be even easier as the focus will be on the CC system to which   only CC agents (and some CC staff) are connected. The UC system will stay as it is

Typically, the ACD replacement or extension occurs after an IVR replacement. If that is not the case, an existing IVR or Outbound solution may need to be integrated into the SIP solution.   An IVR Server (I-Server) can be used to integrate the IVR.   However, if SIP Server is being used to extend the contact center for additional agents, the integration to the original PBX may be enough.

  A complete replacement of a PBX using Genesys SIP Server is documented in the SIP Voice Solution Blueprint. The following section will focus on extending an existing Avaya environment with Genesys SIP Server as the ACD for all or a subset of the contact center agents. This could also be the beginning of a migration strategy that moves all users off of Avaya.

4.1 ACD Replacement Deployment

The following deployment diagram assumes that SIP Server will be used to extend or migrate contact center agents off of the existing PBX, leaving the PBX in place for other enterprise users. It also assumes that Genesys routing was in place on the previous Avaya PBX.
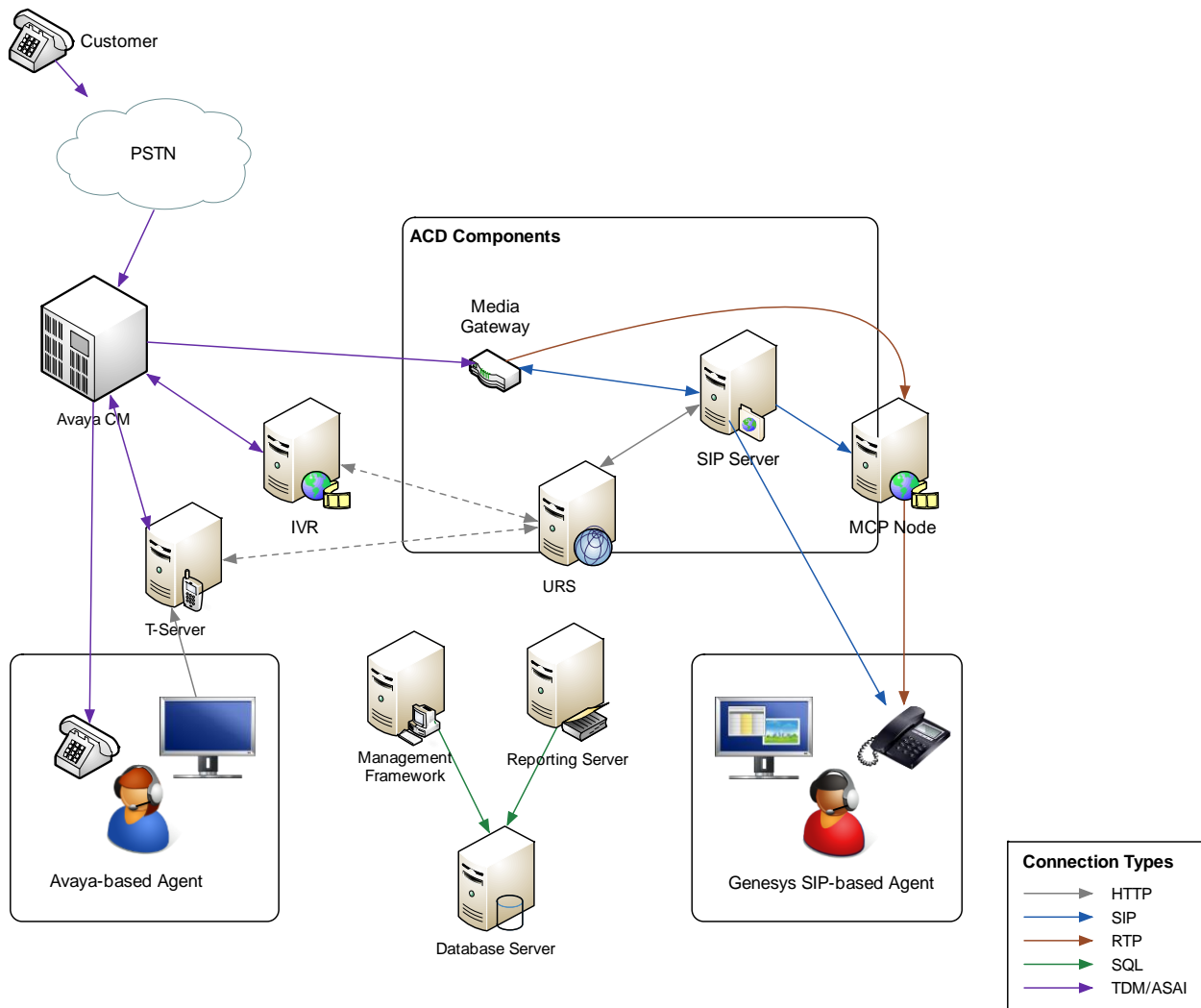
Figure 5: ACD for Contact Center Agents

The T-Server on the PBX enables some agents to remain on the Avaya PBX while others migrate onto the Genesys solution. It may also be used to route calls to back office staff as needed.

If a Session Manager is already deployed, SIP Server can be used to augment or replace the Avaya-based agents. Using SIP Server as an ACD with Session Manager is depicted in the following figure:
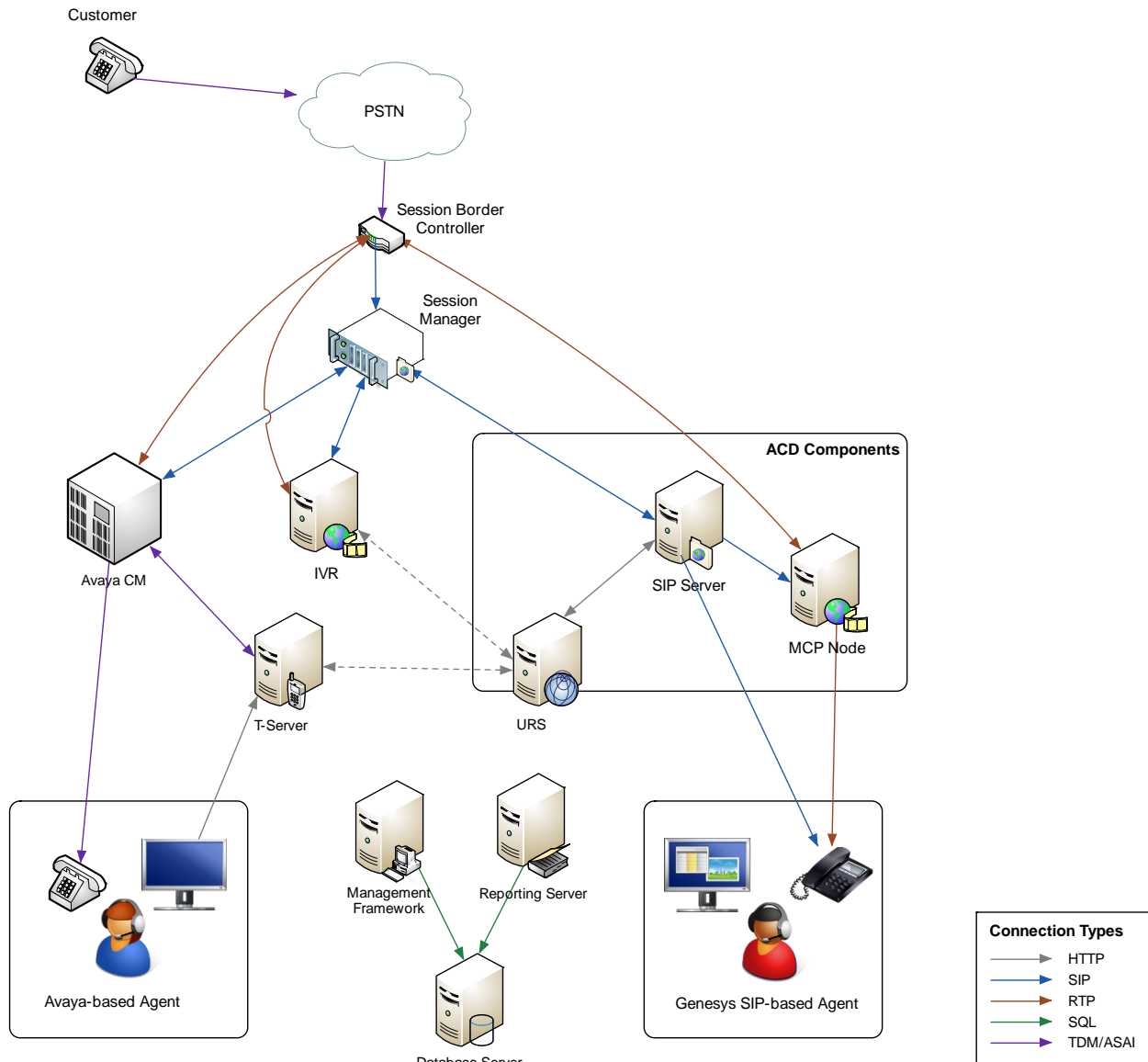
Figure 6: ACD with Session Manager deployment

Note that using Session Manager to attach to the SIP Trunk has been successfully deployed in the field, but hasn't been tested within the labs.   Therefore a field validation is recommended for this type of deployment.

Routing and reporting should be as transparent as possible once agents are established on both Avaya and Genesys SIP Server. URS and StatServer need to be connected to both the Avaya T-Server and SIP Server.   Agents' skills should be irrelevant to the platform as well as the phones the agents are using..

Using VQN's plus additional Avaya routing logic should be avoided or the routing logic may need to be updated to account for that variance.

4.2   ACD Components

The following table outlines the components required to replace the ACD within an Avaya environment.

Category	Component	Notes
SIP Platform	SIP Server	SIP platform for agent telephony and front-end to GVP
	SIP Feature Server	Dial Plan, Device Management and Voicemail
	SIP Proxy	HA proxy component
Media Server	Genesys Media Server	
Routing	Universal Routing Server (URS)	Should already be in place
	Orchestration Server (ORS)	Optional
	StatServer	
IVR Integration	*IVR Server*	*Optional for integrating a 3rd party IVR system.*
Administration	Genesys Administrator	UI
	Genesys Administrator Extension (GAX)	UI
Configuration	Configuration Server	Should already be in place
	License Manager (FlexLM) License Reporting Manager	LRM replaces FlexLM
	Local Control Agent (LCA)	

	Message Server	
	SNMP Master Agent	
	Solution Control Server (SCS)	
Database		
	DBServer	
User Applications	Composer	Used for Orchestration & routing strategy development
	Genesys Agent Desktop, Workspace or custom desktop with SDK	Integration with customer's existing desktop.

Table 3: ACD Components

If the ACD is being extended or there will be a migration period where the Avaya PBX may be running in conjunction with the Genesys SIP Server, the following components may also be required.

Category	Component	Notes
SIP Connectivity	Session Manager (SM)	SIP Proxy & trunk interface.
	SES	SES is now EOL but is listed here for the cases where the customer has decided not to upgrade to SM and has an existing SES in place.
CTI Interface	AES	Main interface between the Genesys T-Server and Avaya CM. Required to route calls to agents on CM.
	AES/ASAI license	Base CTI license required by Genesys
	AES/TSAPI	Provides additional support for SM registered SIP phones
	AES/DMCC	Not typically required except for some 1st party call recording scenarios.

Table 4: Avaya Components for ACD

4.3 Displacing Phones

One of the biggest expenses in the contact center is the phone. Many customers naturally wish to reuse their phones as they move from their PBX. This is often unsupportable.

Avaya CM supports both H.323 phones and SIP phones. The typical models encountered are:

- 4600 series H323 phones
- 9600 series H323 phones
- 9600 series SIP phones

The CS1000 typically supports UNIStim-based phones:

- Nortel Meridian series
- Nortel IP series
- Nortel Norstar series

SIP Server can support a limited set of Avaya SIP-based phones. There are several limitations that should deter most customers. Specifically, phones need to be set to auto-answer and there are certain hold, transfer and conferencing scenarios that do not work properly.

The supported SIP hard phones from Avaya are listed here:

- **[SUPPORTED MEDIA INTERFACES]**

The following whitepaper details the phone configuration and details on the limitations of the integration:

- **[AVAYA 9650 WHITEPAPER]**

The most successful SIP Server deployments use either softphones (including the SIP Endpoint within Workspace Desktop Edition) or one of the SIP Select phones (e.g., AudioCodes, Polycom, Yealink).

5 Outbound Dialer Replacement

There have been several instances where Genesys has replaced the Avaya outbound dialing capabilities with a Genesys-based solution. One of the prime motivators is the cost of upgrading older hardware to handle an increased workload.   Avaya requires additional proprietary circuit boards to support an increase in Call Progress Detection (CPD), which can be a considerable investment. A Genesys software-based solution is more cost effective.   Avaya does have other CPD options, including software- based and CTI to CM solutions. However these may still require upgrades to the PBX that the customer may wish to avoid.

The solution replaces the obsolete Outbound dialer and CPD boards with Outbound Contact Server, SIP Server and GVP or Media Servers.

Depending on the organization structure, Outbound agents can be set up on SIP Server.   However, if blending Inbound and Outbound agents is required and the customer is not prepared to displace their PBX, Outbound can be easily integrated with the PBX using typical T-Servers.

5.1 Outbound Dialer Deployment

The following diagram depicts a typical Outbound Dialer deployment within an Avaya environment.
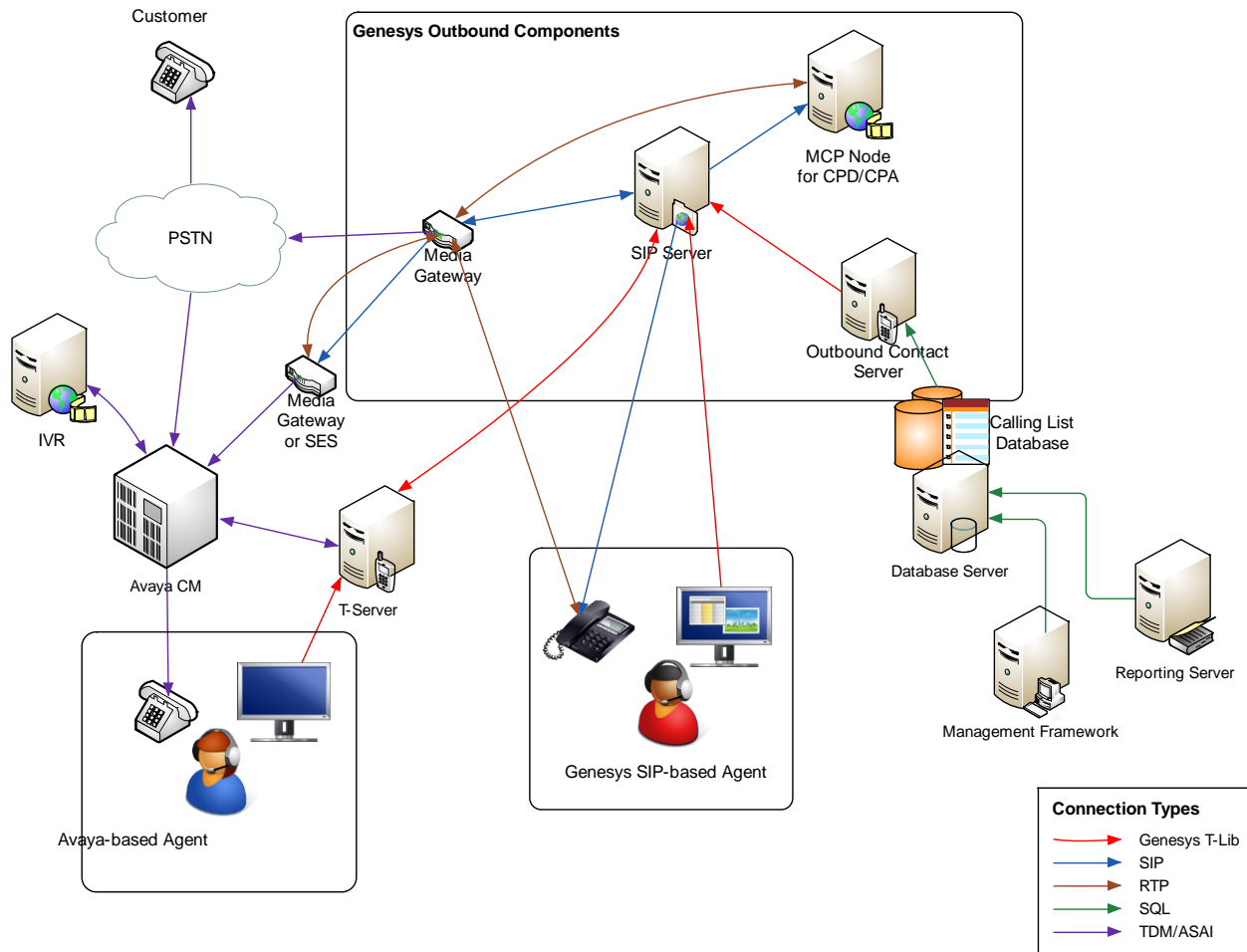
Figure 7: Outbound Dialer Replacement

A GVP-based outbound solution requires either a media gateway to the PSTN or an SBC to a SIP Trunk for making the outbound calls.   MCP nodes will handle the CPD/CPA processing.

The Outbound Contact Server manages the outbound campaigns. It reads in the calling list from the customer's database and instructs SIP Server to make the outbound calls.

This solution can support agents on the legacy Avaya PBX and/or agents on SIP Server. Hosting Outbound agents on SIP Server can alleviate the load on the PBX, allowing the PBX to handle more enterprise users and Inbound agents.   Using SIP Server can also provide the proof-points for moving to an ACD Replacement solution in the future.

If Avaya Session Manager is already in place, the Media Gateways between the Outbound components and the CM & PSTN are replaced by Session Manager and its own requisite Gateway/SBC. The following diagram depicts one possible deployment of Outbound with Session Manager.
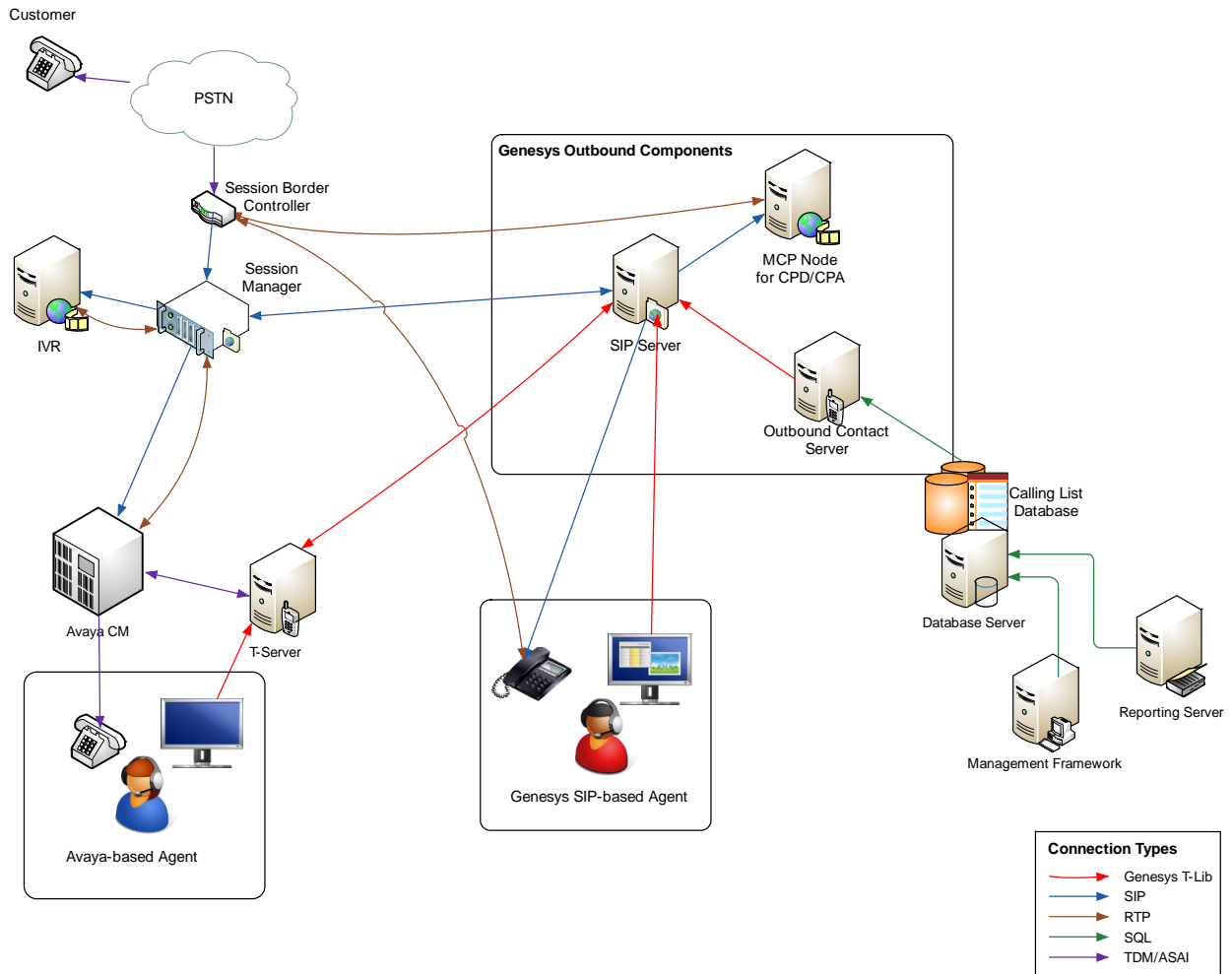
Figure 8: Outbound with Session Manager

Note that when setting up outbound agents on Avaya, Session Manager will be responsible to proxy the requisite SIP messages to the Avaya CM. CM will then connect the agent to the outbound call.

5.2 Outbound Components

The following table lists the components required to replace an outbound dialer solution with Genesys.
Note: It is assumed that the customer already has many of the framework and routing components already in place; those components may need adjustments to their configuration and sizing.

Category	Component	Notes
SIP Platform	SIP Server	SIP platform for agent telephony and front-end to GVP
	SIP Feature Server	Dial Plan, Device Management and Voicemail
	SIP Proxy	HA proxy component
Media Server	Genesys Voice Platform	
Outbound	Outbound Contact Server	Outbound dialer
Database		
	DBServer	
User Applications	Composer	Used for Orchestration & routing strategy development

Table 5: Outbound Components

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6 IVR Replacement

Avaya platforms including Avaya Voice Portal, Avaya Experience Portal, Nortel MPS500, MPS100, and Nortel Intelligent Communications Portal (ICP) are all solutions that may be replaced by Genesys Voice Platform (GVP).   Typical reasons for this replacement include end of life, the cost of update or expansion, as well as lack of feature parity with GVP to meet business goals.

Larger IVR environments may require only a partial solution – maintain the existing IVR but use Genesys SIP Server and Media Servers for call parking.

This replacement may require integration into the existing PBX using a standard T-Server integration. Note that once the SIP Server has been deployed, there is potential for hosting remote or group of agents on SIP Server.

When deploying a Genesys IVR solution into an Avaya environment, there are several factors to consider:

- TDM or SIP Trunk connection to PSTN

- In front or behind the PBX deployment

- SIP Qualification & Parking (SQP) versus full GVP

- Avaya SES or Session Manager

Most of these factors pertain to the customer's environment and how the Genesys solution needs to fit into their infrastructure.

Qualification & Parking vs GVP:

A full Genesys Voice Platform deployment provides VXML support, TTS, ASR, CPD and various other advanced capabilities. For some customers all the capability are not required or the price is too high. They may simply need a DTMF menu and music on hold.   Fortunately, the deployment for both is very similar, aside from licensing and the VXML web server.

Play Announcement and Collect Digits (DTMF), basically for a 'Simple IVR' flow. URS and/or ORS control the sequence of treatments for these types of routing applications. If one was sending the call to an agent, then one can use SQP for the parking and play music/video on hold.

Note that if the customer is currently only using the media resources of the Avaya PBX, then SIP Qualification & Parking is likely the best substitute (assuming they are not planning for a functionality upgrade). Similarly, if the customer is replacing an Avaya Voice Portal or Nortel MPS, then GVP is probably the best solution.

6.1 IVR Deployment Options

6.1.1 IVR In Front

The IVR in front deployment pushes all incoming calls into the IVR system before forwarding to the PBX for agent handling. The following diagram assumes that an existing legacy Avaya CM is in place with Genesys routing.
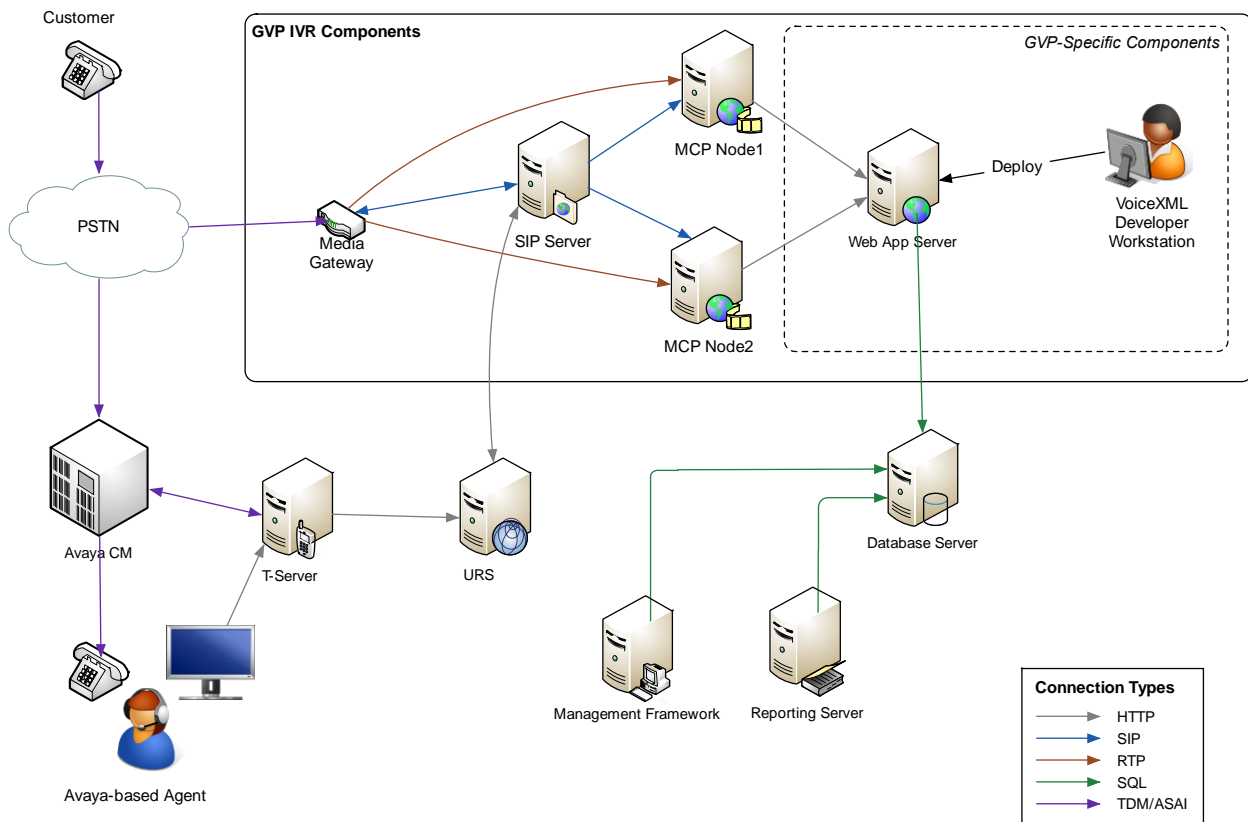

Figure 9: IVR In-Front Deployment

The GVP IVR components denote the new components that will replace the previous IVR system. The GVP specific components are required if a full GVP implementation is licensed (a Qualification & Parking deployment will not include those components).

Customer calls are sent to the IVR components first before being transferred to the agents connected to the Avaya PBX. Depending on the sophistication of the IVR application and the customer's routing strategies, there are a few ways to move the call to the agent on the PBX:

- Transfer via SIP or ISCC to a specific virtual queue on the Avaya CM for further routing. It is possible to implement this without an Avaya T-Server.

- Use data acquired by IVR and routing request to T-Server to transfer the call to a specific ACD queue on CM.

- Based on customer data acquired through IVR and routing request to T-Server, transfer directly to the best available agent on CM.

Note that a media gateway will typically be required in these deployments. A SIP Trunk with a Session Border Controller is also an option, but transferring the call back to the TDM infrastructure may be problematic.

6.1.2   IVR Behind PBX Deployment

Having the PBX in front enables the customer to control the call flows from the PBX. The PBX may also have a built in gateway to connect directly to the PSTN.

Avaya has several options that will impact how GVP is deployed behind the PBX. Older Avaya deployments may still use the venerable Avaya SES for SIP connectivity while recent CM & CS1000 will require the Avaya Session Manager.

6.1.2.1   Avaya SES Deployments

The following diagram depicts the GVP IVR behind the Avaya PBX using the now obsolete SES to provide SIP integration.

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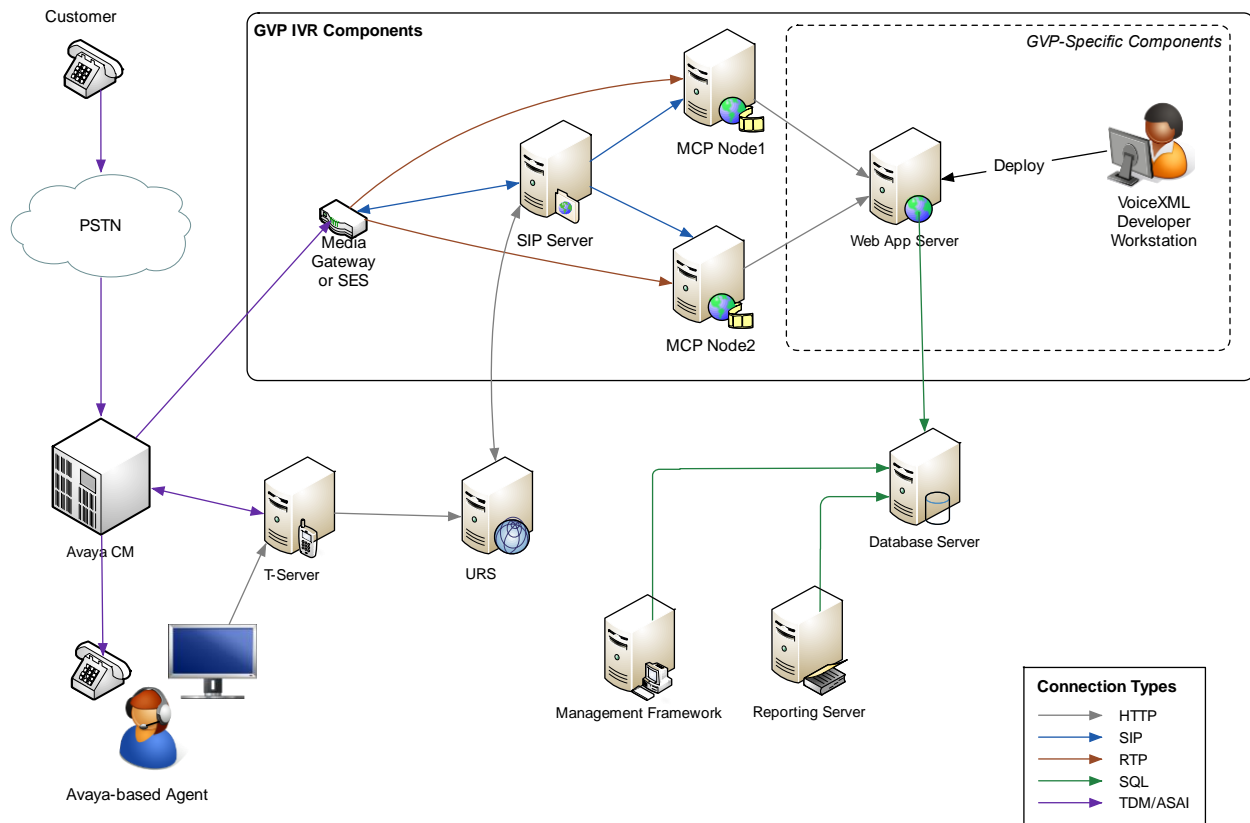Unauthorized disclosure is prohibited. Internal Use Only.

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Figure 10: IVR Behind PBX Deployment

The customer call initially connects to the PBX, which then sends it to GVP for processing. As mentioned in the previous section, the GVP IVR Components denote the new components that would replace the customer's previous IVR infrastructure. A Qualification and Parking deployment would skip the GVP-Specific Components.

Voice connection from a pre-Aura CM (5.x and earlier) will likely be through an SES. A Media Gateway could also be used.

6.1.2.2 Session Manager Deployments

The Avaya Session Manager is a slightly different deployment. There are two options that the customer may choose with an SM. Avaya prefers to deploy a SIP Trunk to the Session Manager and then connect the PBX (CM or CS1000) to the Session Manager. However, many customers prefer to reuse the gateway capability of their existing PBX and then link back to the Session Manager.
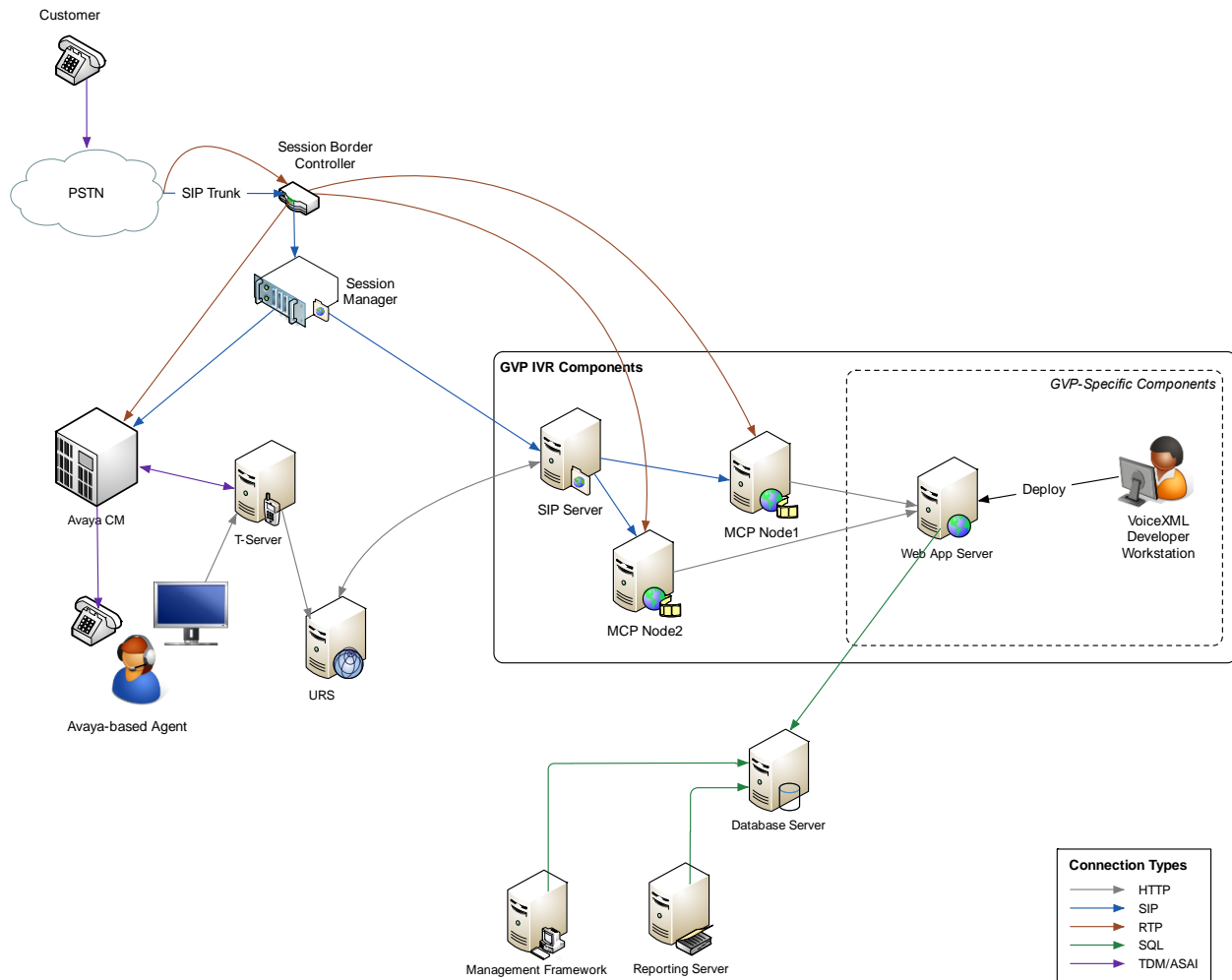
Figure 11: GVP with Session Manager Trunk Deployment

Note that using Session Manager to attach to the SIP Trunk has been successfully deployed but hasn't been tested within the labs. Therefore,   a field validation is recommended for this type of deployment.
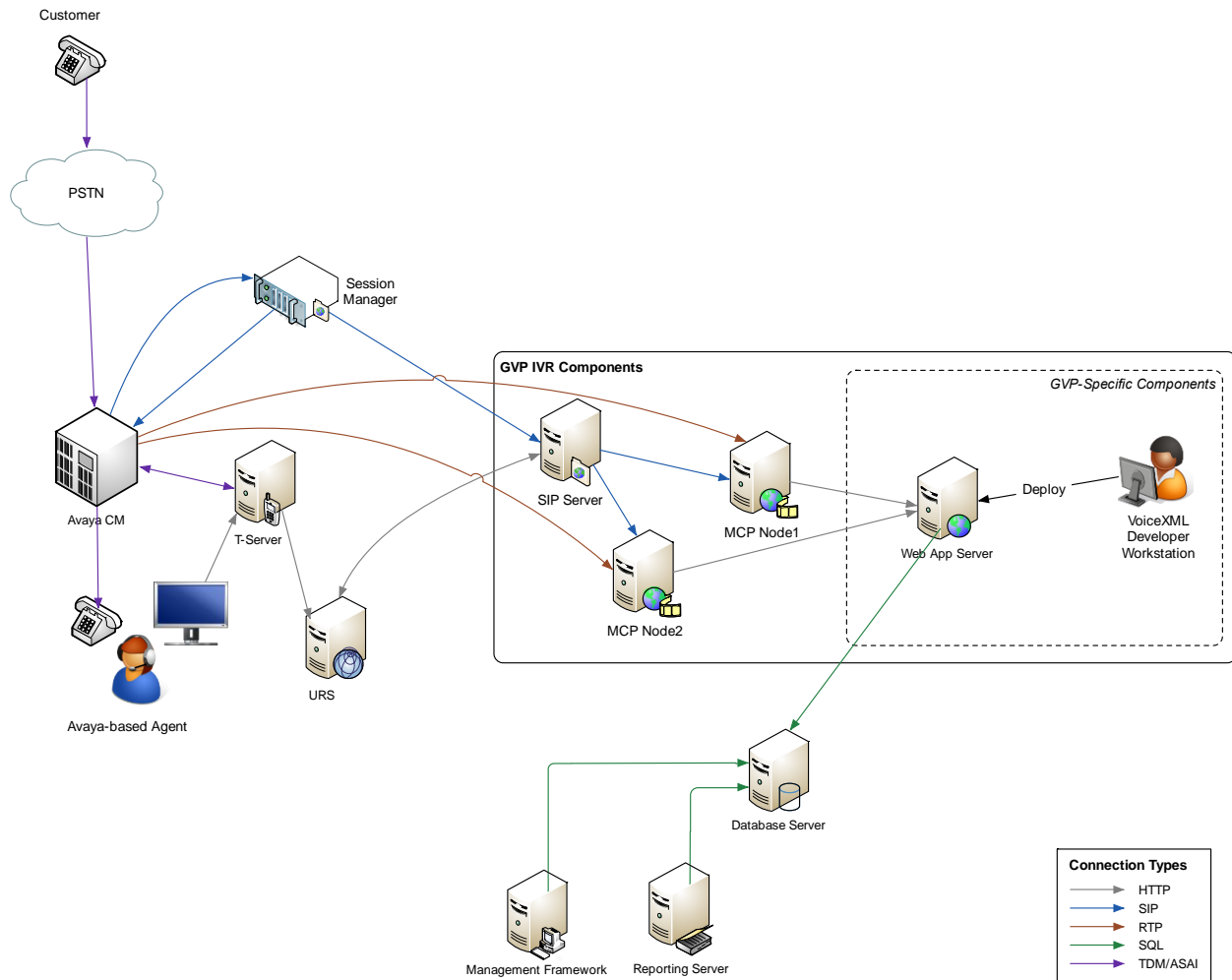
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Figure 12: GVP with Session Manager and CM Gateway

In both scenarios, Session Manager acts as a sophisticated SIP Proxy and will control much of the network routing. In a multi-site Avaya deployment, SM can unify the dial plan across various Avaya PBXs, provide Call Admission Control and geo-redundancy.

For further technical information on integrating Avaya Session Manager with Genesys, please consult the ODS Whitepapers, specifically:

- **[AVAYA_SM_6.2,GVP,SIP_SERVER--WHITEPAPER.DOCX]**

- **[AVAYA_SM_6.2--SIP-SERVER--WHITEPAPER.DOCX]**

6.2   IVR Components

The following table lists the components required to replace an Avaya IVR system (Voice Portal or MPS) with a Genesys GVP based system. Note that framework and routing components (if used) are assumed to already be in place.

Category	Component	Notes
SIP Platform	SIP Server	SIP platform for agent telephony and front-end to GVP
	SIP Feature Server	Dial Plan, Device Management and Voicemail
	SIP Proxy	HA proxy component
Media Server	Genesys Voice Platform	
	Genesys Media Server	Optional in place of GVP if only replacing Call Parking
Database		
	DBServer	
User Applications	Composer	Used for Orchestration & routing strategy development

Table 6: IVR Components

There are several Avaya components that need to be in place to support the GVP deployment.   The following table lists the various optional components that may be required.

Category	Component	Notes
SIP Connectivity	Session Manager (SM)	SIP Proxy & trunk interface.
	SES	SES is now EOL but is listed here for the cases where the customer has decided not to upgrade to SM and has an existing SES in place. Note for customers not planning to migrate off of Avaya CM & SES, using SM is preferable.
CTI Interface	AES	Main interface between the Genesys T-Server and Avaya CM. Required to route calls to agents on CM.
	AES/ASAI license	Base CTI license required by Genesys
	AES/TSAPI	Provides additional support for SM registered SIP phones
	AES/DMCC	Not typically required except for some 1st party call recording scenarios.
PBX	CM	CM 6.3.x is the current Avaya supported version.
	CS1000	CS1000 7.6 is the current Avaya supported version

Table 7: Avaya Components for IVR

Note that a 3rd party Media Gateway or Session Border Controller will be required for some of the deployment options.

6.3   HA and Disaster Recovery

High availability deployments for GVP and SIP Server as an IVR are well documented **[HADEPLOYMENT]**, as is Disaster Recover/Business Continuity **[SIPBCARCHITECTURE]**.   In addition, the GVP/IVR deployment should ensure there is no single point of failure.

For IVR in front deployments, this means ensuring that there are multiple Media Gateways or SBCs from the carrier network towards the GVP components. A similar duplication is required when integrating directly with CM.

Session Manager HA is slightly different.   SM can be clustered or work in Active/Active pairs. The preferred mechanism for Genesys is to configure the SM's in active/active pairs and then set up a FQDN in DNS pointing to the two Session Managers.

6.4   Application Migration

Migrating the old IVR application to GVP may be an issue. The time and cost of building a new IVR application may eclipse the other savings.

Rather than migrating the application 'as is' choosing to redesign the application and create a modern IVR application which can deliver greater self-service and routing can provide additional benefits to help mitigate development costs. Introduce Composer for building the application and focus on additional features like ASR & TTS. Keep in mind that there is still a time and cost factor.

Usually old IVR applications are not oriented towards IT environments and current best practices. They still use proprietary server-to-server integration. Introducing REST/web services integration may simplify and help in the redesign of the IVR apps. Maintaining the application while aligning with the IT back end evolution (IT to dismiss proprietary code and integration) could help in the discussion.

Later versions of Avaya Voice Portal do support VXML (which GVP also natively supports).   Exporting the VoiceXML application from Voice Portal may be viable, but extensive testing and bug fixing should be anticipated. In the end, a new application may need to be built anyway.

7   Definitions, Acronyms, and Document Standards

7.1   Definitions

This document uses various abbreviations and acronyms that are commonly used in Genesys product documentation and the telecommunications and contact center industries. The following table defines terms that will be referenced subsequently in this document.

7.2   Glossary

AACC	Avaya Aura Contact Center
ACD	Automatic Call Distributor
AEP/AAEP	Avaya (Aura) Experience Portal – current IVR platform
AES	Application Enablement Services
ASAI	Adjunct-Switch Application Interface (Avaya AES API)
ASR	Automatic Speech Recognition
AVP	Avaya Voice Portal – previous IVR platform
BCM	Business Communications Manager (legacy Nortel voice and data system)
CC-Elite	Contact Center-Elite (Avaya contact center enabled version of CM PBX)
CIM	Customer Interaction Management
CM	Communication Manager – Avaya PBX platform. CM-Elite adds voice routing to PBX
CME	Configuration Management Environment, another name for the Configuration Layer
CPA	Call Progress Analysis
CPD	Call Progress Detection
CS1000	Communication Server 1000 (Nortel PBX now supported by Avaya)
CTI	Computer Telephony Integration
DB	Database
DBMS	Database Management System
DBS	Database Server
DMCC	Device, Media and Call Control (Avaya AES API)
DN	Directory number

DNIS	Dialed number information service
DNS	Domain Name System
DTMF	Dual-Tone Multi-Frequency signaling
EOL	End Of Life
GA	Genesys Administrator
GAX	Genesys Administrator Extension
GVP	Genesys Voice Platform
HA	High Availability
HTTP	Hypertext Transfer Protocol
IP	Internet Protocol
ISCC	Inter-Sever Call Control (Genesys protocol for multi-site communication)
IVR	Interactive Voice Response
JTAPI	Java Telephony Application Programming Interface
LAN	Local Area Network
LCA	Local Control Agent
LM	License Manager
LRM	License Reporting Manager
MCP	Media Control Platform (GVP media component)
MPP	Media Processing Platform (related to Avaya Voice Portal)
MPS	Media Processing Server (legacy Nortel IVR series)
MSML	Media Server Markup Language
OCS	Outbound Contact Server
ORS	Orchestration Server
OS	Operating System
PBX	Private Branch Exchange
PDS	Predictive Dialing System (Avaya outbound dialer)
PSTN	Public Switch Telephone Network
RDBMS	Relational Database Management System
RTP	Real-time Transport Protocol

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SCS	Solution Control Server
SCXML	State Chart XML: State Machine Notation for Control Abstraction
SDK	Software Development Kit
SES	SIP Enablement Services
SIP	Session Initiation Protocol
SM	Avaya Session Manager
SMB	Small and Medium-sized Businesses
SMS	Short Message Service
SNMP	Simple Network Management Protocol
SQL	Structured Query Language
SQP	SIP Qualification & Parking
TDM	Time-Division Multiplexing
TLib	TServer Library
TSAPI	Telephony Server Application Programming Interface
TTS	Text To Speech
UC	Unified Communications
UI	User Interface
URS	Universal Routing Server
VM	Virtual Machine
VXML	Voice XML (Extensible Markup Language)
WAN	Wide Area Network

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