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Agent Pacing Service Deployment Guide

9/1/2025

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Learn the purpose of the Agent Pacing Service and the available documentation.

Agent Pacing Service combines statistical data from the contact center with statistics collected by Genesys Predictive Engagement to predict the availability of agent resources. It forwards the results to Genesys Predictive Engagement, so that Genesys Predictive Engagement can make an informed decision about whether to send a predictive engagement request to a specific visitor.

- How Pacing works
- Genesys Multicloud CX Prerequisites
- Provisioning
- Configuration
- Install the Pacing Service

How Pacing works

Contents

- 1 The pacing algorithm
 - 1.1 Virtual queue
 - 1.2 Agent Group
 - 1.3 Pacing target
- 2 Output parameter
- 3 High-level architecture

Understand the concept of pacing and learn how the Agent Pacing Service ensures agents are available to assist customers.

Many products allow you to focus on *reactive* engagement sessions, in which a customer initiates the connection with your contact center by responding to a *static* request, such as a **Chat Now** button. Genesys Predictive Engagement goes a step further, by predicting when it's a good time for your contact center to take the initiative—to reach out to a customer proactively. For example, Genesys Predictive Engagement might see that a customer is likely to abandon a purchase, so it proactively sends them a pop-up that says "Let's chat!" At that point, the customer can click an **Accept** button and your agents have an opportunity to help them complete their purchase.

Most of the information that Genesys Predictive Engagement works with is focused on your customers. This data helps you pinpoint the ones who are most likely to respond well to a proactive invitation.

This works great when you have enough agents:

Available Agents

Eligible Customers





But what if a customer accepts an engagement offer—and your agents are too busy to answer?



That's what pacing is for. A *pacing algorithm* helps you manage your agent load by comparing it to your traffic and predicting how many proactive invitations you can send out—without making your customers wait too long for a response from your agents.

The pacing algorithm

Agent Pacing Service uses a pacing algorithm to balance two things:

- The need for your agents to stay busy
- The need to minimize the abandonment rate for proactive interactions

The algorithm uses the following inputs as the basis of its calculations.

Virtual queue

Contact centers use queues of various kinds to hold interactions that are waiting to be processed. These queues can take the form of an automatic call distributor (ACD) on a hardware switch, a queue of digital media interactions supported by Genesys Interaction Server, or a router-based virtual queue. Virtual queues are great because you can easily use them with just about any media type—including voice, chat and email. Agent Pacing Service requires that you pass your interactions through virtual queues, and that you dedicate each queue to a single media type. It's important to keep this in mind when creating your routing strategies.

Agent Group

The Agent Group defines which agents the pacing algorithm should include in its calculations when it predicts whether it's safe for Genesys Predictive Engagement to generate a proactive request. You can use a regular Agent Group, which consists of a pre-configured list of agents that you can only change explicitly, or a virtual Agent Group, whose agent list is defined dynamically based on a skill expression, such as Spanish > 5.

Pacing target

The pacing target uses the output from the pacing algorithm (the number of proactive invitations that can be sent during a specific time interval) to decide whether to send an invitation to a specific visitor who has triggered a hot-lead event.

Important

Genesys Predictive Engagement automatically propagates Agent Group and Virtual Queue information to Genesys Widgets, making it available as UserData to the Routing Logic for the selected engagement channel.

Output parameter

The pacing algorithm produces only one output parameter: the number of proactive invites that can be sent during a specific time interval.

High-level architecture

- 1. When the Pacing Server starts, it opens a connection to Config Server and discovers its pacing targets.
- 2. Pacing Server opens a connection to Stat Server.
- 3. Pacing Server starts performing its pacing calculations, using Stat Server as a primary source of information. For the initial calculations, the count of pending invitations is considered to be **0**.
- 4. Pacing Server uses the currently available data from Stat Server and Genesys Predictive Engagement to calculate the number of proactive invites that can be sent during the specified time interval.
- 5. Pacing Server sends the results of its calculations to Genesys Predictive Engagement.
- 6. Genesys Predictive Engagement processes the pacing information and returns the count of pending invitations.
- 7. A new pacing cycle is started from step 4, using the information sent by Genesys Predictive Engagement.

If something goes wrong—for example, if Pacing Server starts using too much memory, or if Genesys Predictive Engagement becomes unreachable—Pacing Server sends an alarm to Message Server.



Architecture

Contents

- 1 Architecture diagram
- 2 Performance
- 3 Scalability
- 4 High availability

Read about performance and high availability considerations for Agent Pacing Service.

Architecture diagram



The Agent Pacing Service connects to only one Stat Server (high-availability pair).

Important

The Agent Pacing Service requires that the Stat Server has visibility of all potential pacing targets.

Multiple actively running pacing nodes can belong to the same pacing cluster. Under normal conditions, there is only one master pacing node that provides pacing target information to Genesys Predictive Engagement. All pacing nodes are interconnected, and they self-determine which is the master pacing node based on an internal election algorithm.

Performance

Each pacing node is designed to support up to 10,000 pacing targets. The execution of the pacing algorithm does not put significant pressure on either the memory or the CPU. However, as the number of pacing targets increases, so does the size of the HTTP request and the corresponding response between Pacing Service and Genesys Predictive Engagement. For this reason, network bandwidth becomes a concern in terms of system stability.

Problems may occur if the roundtrip of the HTTP package reaches the timeout limit or the pacing refresh period. If you experience performance problems, try tuning your network bandwidth or reducing the number of pacing targets.

Important

The performance of a single pacing server node has been verified for the following configuration:

- 2 CPUs (Core i7)
- 6 Gb RAM
- 2 Gb of allocated Java Heap memory

Scalability

For nodes belonging to same pacing cluster, the scalability model is N+1. Based on performance testing, two pacing nodes should be sufficient to sustain most deployments.

High availability

This release of Agent Pacing Service works with a single Stat Server HA pair. To ensure high availability in a premises-based environment, install two (2) Pacing Server nodes.

Install the Pacing Service

Contents

- 1 About the Pacing Service Cluster
- 2 Deploy Pacing Server
- 3 Import the Pacing Service cluster application template
- 4 Create the cluster application
- 5 Configure the cluster application
- 6 Import the Pacing Server application template
- 7 Create and configure a node application
- 8 Add a node application to the cluster
- 9 Install Pacing Server
- 10 Configure alarms
- 11 Configure a forward proxy (optional)

Complete the steps to install the Pacing Server.

The 9.0 release of Pacing Server can be used on premises.

About the Pacing Service Cluster

Agent Pacing Service uses an N+1 architecture. This means that almost all of the configuration is handled at the level of the cluster, rather than at the level of individual nodes. In particular,

- The cluster combines one or more nodes. You must install and configure at least one Pacing Server node in order to use Pacing Service. Every time you add a node to the cluster, you must create and configure it using the same steps you used for the first node.
- All nodes are treated as equivalent to each other. Because of this, the nodes only contain a connection to the cluster application.
- Connections to other Genesys servers—such as Stat Server and Message Server—are defined for the cluster.

Important

Pacing Service is a single-tenant application—it only has access to the tenant, objects, and transaction list of the tenant it is configured for. In a multi-tenant environment, you can configure a Pacing Service for each individual tenant.

Deploy Pacing Server

To deploy Pacing Server, follow these steps:

- 1. Import the Pacing Service Cluster Application template
- 2. Create the cluster application
- 3. Configure the cluster application
- 4. Import the Pacing Server Application template
- 5. Create and configure a node application
- 6. Add the node application to the cluster

- 7. Install Pacing Server
- 8. Configure alarms
- 9. Configure a forward proxy (optional)

Import the Pacing Service cluster application template

Prerequisite: Download the Pacing Server installation on the host where you are going to install it.

1. Open Genesys Administrator Extension and navigate to **Environment > Application Templates**:

ල් කෙ	Dashboard	Configuration	Routing Parameters	Administration	Centralized Lo	ogs Engagement Manager	
Home > /	Application Ten	nplates > Applicat	ion Templates				7
Select	Edit 🗘	New 📋 Delete	: More 🔍 Sho	ow Quick Filter	Directory A	pplication Templates (Application Template Fo	older)
	Name		*	Туре	\$ V	Version	/
	CA.						

2. Click New. In the Tasks panel, click Import Application Template:

> Application Templates > Application Templates > New Properties reral Name *	nport Metadata	O Import Application Tem
ieneral Name *		
Options New		
Application Options Type * Version *		
· · · · · · · · · · · · · · · · · · ·		
Tenant		
Environment IIII		

3. Navigate to the **Pacing Server installation root/templates** folder and select **Pacing_Server_Cluster.apd**:

		×
🛕 Plea	se Confirn	ı
Choose an app import.	lication templa	te file to
Application Te	mplate File (.ap	d) *
Choose File	Pacing_Serv	Cluster.apd
ок	с	ancel

- 4. Click Import Metadata.
- 5. Navigate to the **Pacing Server installation root/templates** folder and select **Pacing_Server_Cluster.xml**:

Import Metadata Please select an application metadata file to import. Application Metadata File (.xml) * Choose File Pacing_Server_Cluster.xml	Import Metadata Please select an application metadata file to import. Application Metadata File (.xml)* Choose File Pacing_Server_Cluster.xml	Import Metadata Please select an application metadata file to import. Application Metadata File (.xml)* Choose File Pacing_Server_Cluster.xml OK Cancel		
Please select an application metadata file to import. Application Metadata File (.xml) * Choose File Pacing_Server_Cluster.xml	Please select an application metadata file to import. Application Metadata File (.xml) * Choose File Pacing_Server_Cluster.xml	Please select an application metadata file to import. Application Metadata File (.xml) * Choose File Pacing_Server_Cluster.xml OK Cancel	🛕 Impo	ort Metadata
Application Metadata File (.xml) * Choose File Pacing_Server_Cluster.xml	Application Metadata File (.xml) * Choose File Pacing_Server_Cluster.xml OK Cancel	Application Metadata File (.xml) * Choose File Pacing_Server_Cluster.xml OK Cancel	Please select a to import.	an application metadata file
Choose File Pacing_Server_Cluster.xml	Choose File Pacing_Server_Cluster.xml	OK Cancel	Application Me	etadata File (.xml) *
	OK Cancel	OK Cancel	Choose File	Pacing Server Cluster yml
	on ourier		Choose the	Tuong_oerver_ordster.xm

6. Click Save

Create the cluster application

Prerequisite: Import the Pacing Service cluster application template

- 1. Open Genesys Administrator Extension and navigate to **Environment > Applications**.
- 2. In the Tasks panel, click New:



3. Specify the name of the Pacing Service cluster application (for example, *Pacing_Service_Cluster_9.0*), then click to select a template:

	·····	perues	
General	Name *		
Connections	Pacing_Service_Cluster_9.0		
Ports	Template *	Туре	
Tenants	Varian	-	
Options	Version	Is Application Server	
Application Options	Tenant		

4. Select the application template that you created previously:

=				Q, Quick Filter
Name	₽	Туре	₽	Version
Pacing_Server		Genesys Generic Server		9.0.0
Pacing_Server_Cluster		Application Cluster		9.0.0
Pacing_Server_Cluster_9.0.000.04		Application Cluster		9.0.000.04

- 5. Select the **General** tab and:
 - Set the value of the **Working Directory** and **Command Line** fields to . (a single dot).
 - Make sure that **State** is enabled.
 - Select the **Host** on which the Pacing Service Cluster will reside. This is usually the fully qualified

domain name or IP address of the load balancer that provides access to the Pacing Service (that is, the set of Pacing Servers)

• Click Save.

_ GAX Dashboard C	configuration Routing Parameters	Administration Centralized Logs	Engagement Manager	default ?
Home > Applications > App	plications > Pacing Service > New Pro	perties		
General	9.0.000.04	 Is Application Server 		^
Connections	Working Directory *		(
Ports	Command Line *			
Tenants				
Options	Command Line Arguments			
Application Options	I Startup Timeout *	Shutdown Timeout *		
	90	90		
	Auto-Restart	✓ Primary		
	Host *			
	Certificate	Certificate Description		
	Certificate Key	Trusted CA		
	Tenant	✓ State Enabled		
	Environment			
	Cancel		(Apply Save

6. The new Cluster application is now available:

ő	GAX	Dashboard Configuration Routing Pa	rameters	Administration		alized Logs Engagemen	it Mar	nager					d	efault ?
Ho	me > A	pplications > Applications > Pacing Service	(4)											
	Select	🖉 Edit 🗿 New 📋 Delete 🚦 More	Q, sh	ow Quick Filter	lirector	Pacing Service (A	pplica	tion Folder)		*			Q	invironment
		Name	¢	Status	¢	Туре	¢	Version	¢	Mode	\$ Host	\$ Server 🌵	Template	٥
	0	Pacing_Service_Cluster_9.0		Stopped		Application Cluster		9.0.000.04			demosrv	~	Pacing_Server_Clu	ister_9

Configure the cluster application

Prerequisite: Create the cluster application

1. Open Genesys Administrator Extension and navigate to **Environment > Applications**, then open your cluster application:

Accounts	Routing / Digital	Application Templates Anelications Detection / Reaction Scripts Hosts Scripts Schulons Temets Yere Zones	Switching	Outbound	
))				

2. In the **Connections** tab, click **Add**:

gax Dashboard	Configuration	Routing Parameters	Administration	Centralize	d Logs E	ngage	ment Manager						
Home > Applications > Ap	plications > Pa	cing Service > Pacing	Service_Cluster_9.	0 Properties									a Delete Applicat
General	Connect	ions											/
Connections		Server		¢	Secured	\$	Connection Protocol	Ş	Local	Ş	Remote	Ş	Trace Mode
Ports	No iter	ns											
Tenants													
Options													
Permissions													/
Dependencies													(
Application Ontions													

3. Select the **Stat Server** application. Leave the connection port ID set to **default**. Click **OK**:

vew		
Server *		
Stat_Server		
Port ID*		
default		~
Connection Protocol		
		~
Local Timeout		
0		
Remote Timeout		
0		
Trace Mode *		
Unknown Trace Mode		*
Transport Protocol Parameters		
Application Parameters		1.
Approximit Futurities		
	OK Ca	incel

- 4. If appropriate, you can also add a connection to Message Server (to apply the network logging options).
- 5. Navigate to the **Ports** tab and set the desired value of the default port. **Note:** The cluster application does not represent a particular server: you must treat as the load balancing entry point. Set the connection type to **http**. Genesys recommends that you use a secure connection.

General	Ports								
Connections	0	ID	 Å ₹	Port	Ş	Connection	¢ ⊽	HA Sync	Listening Mode
Ports		default		9081		http			Secured
Options									
Permissions									

6. In the **Tenant** tab, click **Add** and select your tenant. For instance, *Environment*.

eneral	Tenant	s		
Connections		Name	Å	State
Ports		Environment		Enabled
Options				
Permissions				
Dependencies				

7. Navigate to the **Application Options** tab. You can keep the default values for all options except the ones in the **pacingEndpoint** section.

General							
Veneral	Applica	tion Options					Q, Quick Filter
Connections		Name 🗘	Section	¢	Кеу	Value	
Ports	-	metrics v neapmetrioryosage.mesnou	ineur.s		пеарлиени ускадели еконого	0.0	
Tenants		metrics \ GcFrequency.threshold	metrics		GcFrequency.threshold	24	
Options		metrics \ reporter.console.logFrequency	metrics		reporter.console.logFrequency	30min	
Permissions		metrics \ reporter.messageServer.logFreque	metrics		reporter.messageServer.logFrequency	30min	
Dependencies		metrics \ reporter log.enabled	metrics		reporter.log.enabled	false	
Application Options		metrics \ GcLatency.threshold	metrics		GcLatency.threshold	1000	
		metrics \ reporter.messageServer.enabled	metrics		reporter.messageServer.enabled	true	
		metrics \ reporter.log.logFrequency	metrics		reporter.log.logFrequency	30min	
		metrics \ reporter.console.enabled	metrics		reporter.console.enabled	false	

8. Click Save.

Import the Pacing Server application template

Prerequisite: Configure the cluster application

1. Open Genesys Administrator Extension and navigate to **Environment > Application Templates**:

U V	၌ GAX	Dashboard	Configuration	Routing Parameters	Administration	Centralized I	Logs Engagement Manager	
ł	Home > /	Application Ten	nplates > Applicat	ion Templates				(
[Select	🖉 Edit 🖨	New 📋 Delete	More 🔍 Sho	w Quick Filter	Directory	Application Templates (Application Template	Folder)
		Name		*	Туре	Ş	Version	/
		GA						

2. Click **New**. In the **Tasks** panel, click **Import Application Template**:

g GAX		Configuration	Routing Parameters		Centralized Logs	Engagement Manag				
iome >	Application Terr	plates > Applica	ion Templates > New P	roperties					+	Import Metadata
Gene	ral	Name *								
Optic	ms	New								
Appli	cation Options	Type *		Vers	ion *					
				· ·						
		Tenant			teres Provide d					
		Environn	sent		state Enabled					

3. Navigate to the **Pacing Server installation root /templates** folder and select **Pacing_Server.apd**:

🛕 🛛 Please Co	onfirm
Choose an application import.	template file to
Application Template F Browse Pacing_S	i le (.apd)* ierver.apd
01/	Cancel

4. Navigate to the **Pacing Server installation root/templates** folder and select **Pacing_Server.xml**:

🛕 Import	Metadata
Please select an a to import.	pplication metadata file
Application Metad Browse Paci	lata File (.xml) * ing_Server.xml

5. Click Save.

Create and configure a node application

You must create and configure every node that you add to the cluster, using the instructions in this section and the following one.

Prerequisite: Import the Pacing Server application template

1. Open Genesys Administrator Extension and navigate to **Environment > Applications**.

onfiguration Mar	Routing Parameters Administration	Centralized Logs Engagement Manager		I	default More Q, Search @ Environme
Accounts	Routing / Digital	Application Templates Aselication Alem Conditions Detection / Recolon Scripts Hotels Scripts Scripts Schlorns Temarits Yime Zones	Switching	Outbound	
Desktop	Voice Platform				

2. In the **Tasks** panel, click **New**:

°OO	Dashboard	Configuration	Routing Paramete	ers Administratio	n Centra	lized Logs	Engagement Mar	nager
Home > A	pplications >	Applications (156)						
Select	🖋 Edit	New 📋 Delete	: More 🔍	Show Quick Filter	Directory	Applica	ations (Application I	Folder)
	Name		\$	Status	☆	Туре	∆ ⊽	Version

3. Specify the name of the Pacing Server application, for example, *Pacing_Server_Node_01*, then click to select a template for creating the application:

	phone in a solid service - item	Properties
General	Name *	
Connections	Pacing_Server_Node_01	
Ports	Template*	Туре
Tenants	Version	-
Options	Version	Is Application Serve
Application Options	Tenant	

4. Select the application template you created previously:

enesys Generic Server Directory	ý					
elect Genesys Generic Serv	/er					
S				, Pacing_Server ×	+	4
Name	¢	Туре	÷	Version		÷
-		Concern Conceio Conue		900		

- 5. Select the **General** tab and:
 - 1. Set the value of the **Working Directory** and **Command Line** fields to . (a single dot).
 - 2. Make sure that **State** is enabled.
 - 3. Select the **Host** on which the Pacing Server node will reside.
 - 4. Click **Save**.

.

General	Pacing_Server_9.0.000.04	Genesys Generic Server	~	
Connections	Component type			
			~	
Ports	Version			
Tenants	9.0.000.04	 Is Application Server 		
Options	Working Directory *			
Application Options	· Command Line *			
	Command Line Arguments			
	Startup Timeout *	Shutdown Timeout *		
	90	90		
	Auto-Restart	✓ Primary	(
	Host *			
	demosrv			
	Ortificate	OutiFasta Description		

6. Navigate to the **Connections** tab and click **Add**. Select the Pacing Service cluster application you created previously, then click **OK**:

New	>
Server *	
PacingService_Cluster	
Port ID*	
default (Secured)	*
Connection Protocol	~
Local Timeout	-
0	
Remote Timeout	
0	
Trace Mode *	
Unknown Trace Mode	*
Transport Protocol Parameters	
Application Daramaters	le
Application Fai differens	
ок	Cancel

7. Navigate to the **Ports** tab and make sure that the value of the default port is set to the port that this Pacing Server node should listen on. Also, set the protocol type to **https**.

Important

- Genesys recommends that you always use the HTTPS protocol.
- Genesys recommends that all instances of Pacing Server listen on the same ports.
- Pacing Servers are connected in the cluster through a dedicated port on the host where the Pacing Server instance is installed. By default, this port is 7800. If this port is already in use, go to the Ports tab and add another port with ID **clustering** and the desired value. You don't have to specify a connection type for this port.

ල් බො	X Dashboard	Configuration	Routing Parameters	Administration	Centralize	d Logs	Engage	ment Manager						
Home	lome > Applications > Applications > Pacing Service > New Properties													
General Ports														
Cor	nnections		ID ID		Ş	Port	₽	Connection	\$	HA Sync	Listening Mode			
Por	rts		default			9081		http			Secured			
Opt	tions													
App	plication Options													

8. Navigate to the **Tenants** tab and click **Add**. Select the same tenant that is specified for the Pacing Service Cluster application:

ő	GAX	Dashboard	Configuration	Routing Parameters	Administration	Centralized Lo	ogs Engagement M			default	?
Но	me > A	pplications >	Applications > I	Pacing Service > New Pro	operties						
	Genera	al	Tenan	ts					Add	Remove	
	Conne	ctions		Name		و چ	State			¢	
	Ports			Environment		E	Enabled				
	Tenant	ts)			
	Option	15									
	Applic	ation Options									
)			
			Car	ncel					Apply	Save	

9. Click Save.

Add a node application to the cluster

Prerequisites:

- Create the cluster application
- Configure the cluster application
- Create and Configure a node application

Although a single-node configuration works well in a lab environment, in order to provide high availability in production, you must use multiple nodes.

Important

- Every time you establish a new node, you must complete the steps described in Create and Configure a node application.
- If you use multiple nodes, you must set up load balancing in your environment.

Install Pacing Server

Prerequisite: Create and Configure a node application

Important

For more information on how to install apps that you have configured in Genesys Administrator Extension, consult Generic Installation Procedures.

Windows

Windows

- 1. In your installation package, locate and double-click **setup.exe**. InstallShield opens the welcome screen.
- 2. Click Next. The Connection Parameters to the Configuration Server screen appears.

- 3. Under **Host**, specify the host name and port number where Configuration Server is running. (This is the main listening port entered in the **Server Info** tab for Configuration Server.)
- 4. Under **User**, enter the user name and password for logging into Configuration Server.
- 5. Click Next. The Select Application screen appears.
- 6. Select the Genesys Generic Server application—that is, the Node app you created above—that you are installing. The Application Properties area shows the Type, Host, Working Directory, Command Line executable, and Command Line Arguments information previously entered in the Server Info and Start Info tabs of the selected Application object.
- 7. Click Next. The Choose Destination Location screen appears.
- 8. Under **Destination Folder**, either keep the default value or browse for the desired installation location.
- 9. Click Next. The Backup Configuration Server Parameters screen appears.
- 10. If you have a backup Configuration Server, enter the Host name and Port.
- 11. Click Next. The Ready to Install screen appears.
- 12. Click **Install**. The Genesys Installation Wizard indicates it is performing the requested operation for Pacing Server. When it is finished, the **Installation Complete** screen appears.
- 13. Click **Finish** to complete your installation of the Pacing Server.

Linux

Linux

- 1. Open the Pacing Server IP in a terminal window, and run **Install.sh**. The Genesys Installation starts.
- 2. Enter the **hostname** of the host on which you are going to install.
- 3. Enter the connection information to log into Configuration Server:
 - 1. The **hostname**. For instance, *demosrv.genesyslab.com*.
 - 2. The listening port. For instance, 2020.
 - 3. The **user name**. For instance, *demo*.
 - 4. The **password**.
 - 5. If the connection settings are successful, a list of keys and Pacing Server applications is displayed.
- 4. Enter the key for the Pacing Server application—that is, the Node app you created above—that you are installing.
- 5. Enter the location where Pacing Server is to be installed on your host.

Note: This location must match the previous settings that you entered in Configuration Server.

- 1. If you have a backup Configuration Server, enter the Host name and Port.
- 2. If the installation is successful, the console displays the following message:

Installation of Pacing Server, version 9.0.x has completed successfully.

Important

This installation procedure automatically provisions all of the Pacing Server-related configuration information. For more information, see Provisioning.

Configure alarms

Genesys recommends that you tune the following Pacing Server-related alarms:

- GC Latency
- Heap Memory Usage
- PacingRequestsFailed
- PacingResponseTargetError
- PacingResponseValidationError

Although these alarms are created automatically during installation, you can remove them if necessary and then re-create them manually.

To access the alarms in Genesys Administrator Extension, open **Environment > Alarm Conditions**.



The automatic provisioning procedure places the Pacing Server-related alarms in the dedicated **PacingService** alarm folder.

Configure a forward proxy (optional)

Important

This feature is available in release 9.0.000.10 and higher.

If your environment permits connections to the Internet only through a forward proxy service (such as DMZ or your local intranet), configure the forward-proxy options, so the Pacing Service can connect to Genesys Predictive Engagement.

Provisioning

Contents

- 1 About Provisioning
- 2 Transaction object for hybrid integrations
- 3 Created objects
 - 3.1 Alarm conditions
 - 3.2 Genesys Stat Server application
 - 3.3 Files specific to Pacing Server
- 4 Run the provisioning tool

Use the provisioning tool or manually provision the Pacing Server.

About Provisioning

You can use Genesys Administrator Extension to manually create all of the Pacing Server-related configuration information in Configuration Server. Or you can do this automatically by running the provisioning tool, located in the **Pacing Server installation directory/tools/provisioning** folder.

Important

The transaction object, **hybrid_integration**, is not controlled by the provisioning tool and should be manually managed.

Tip

- The provisioning tool is run automatically during the installation process.
- You can run the provisioning tool under Windows or Linux.

Transaction object for hybrid integrations

A transaction object is needed for Genesys components to authenticate with Genesys Cloud CX.

Create the transaction object with name (and alias) **hybrid_integration** and type **List** in the **Transactions** folder of the tenant that is specified for Pacing Service (for more information, see *Configure the cluster application* in Install the Pacing Service). Be sure to include the following sections in the annex of the transaction object:

1. Section general

 Option base_auth_url: This is the base URL that is used for integration with Genesys Cloud CX authentication services. The base_auth_url is expected to be https://[region_host]/oauth/token. [region_host] will be the authentication-based FQDN for the appropriate region. For more information see Regions. Option base_service_url: This is the base URL that is used to access Genesys Cloud CX services. The base_service_url is expected to be https://[region_host]/api/. [region_host] will be the APIbased FQDN for the appropriate region. The rest of the url is service- and version-specific. For example, for the Agent Pacing Service, this url is specified in the targetEndpoint option.

2. Section ewt

- Option **client_id**: This is the Client Credential Grant Client ID.
- Option **password**: This is the Client Credential Grant Client secret.

Important

Remember to restart the Agent Pacing Service if you change the values of these options.

Created objects

The provisioning tool connects to Configuration Server and reads the configuration information for the Pacing Server applications. It creates the Genesys objects used by the Pacing Servers and edits the configuration files required to launch the Pacing Servers.

The following objects are created or updated when you run the provisioning tool.

Alarm conditions

Provisioning creates the following default alarm conditions:

- GC Latency
- Heap Memory Usage
- PacingRequestsFailed
- PacingResponseTargetError
- PacingResponseValidationError

You can access these Alarm Conditions in Genesys Administrator Extension by navigating to the **PacingService** folder under **Environment > Alarm Conditions**:

S GAX	g GAX Dashboard Configuration Routing Parameters Reports Administration Web Engagement											
Home > /	Narm Conditions > Alarm Conditions > PacingS	Service										
Select / Edit New Delete More Q, Show Quick Filter Directory PacingService (Alarm Condition Folder)												
	Name 🎄	Description	Category 👙	Timeout 👙	Detect Event	Cancel Event						
	R GC Latency	Defines the garbage collection latenc	Major	86400	10005	10006						
	😤 Heap Memory Usage	Defines the heap memory usage thre	Major	86400	10001	10002						
	R PacingRequestsFailed	Indicates that error occurs during pa	Major	86400	100603	100604						
	ResponseTargetError	Triggers if response contains error o	Major	86400	100605	100606						
	PacingResponseValidationError	Triggers if response contains invalid	Major	86400	100607	100608						

Genesys Stat Server application

Provisioning adds statistics and filters into the options of the Stat Server application connected to the Pacing Service Cluster application. If absent, the following statistics are added:

- PACS_VQ_Abandoned
- PACS_VQ_Accepted
- PACS_VQ_Current

The following filter is also added:

• PACS_Proactive_Interaction

Files specific to Pacing Server

The provisioning tool can fill in pacing-related placeholder values in the following files, which are located in the **Pacing Server installation directory/server** folder:

- launcher.ini
- setenv.bat
- setenv.sh

Because this replacement is usually carried out successfully by the installation script, this feature of the provisioning tool is rarely used.

Run the provisioning tool

Because the provisioning tool is triggered as part of the installation process, you don't usually need to run it manually. However, there are times when you do need to do that. For example, if pacing-related statistics for Stat Server application or pacing-related Alarm Conditions have been lost, you

should run the provisioning tool manually.

Prerequisites

- The configuration applications for the Pacing Servers were created in Configuration Server.
- The connections for the Pacing Service Cluster application include the Stat Server applications.

For more information, see *Create and configure a node application* in Install the Pacing Service.

- 1. Navigate to the Pacing Server installation directory and open the **Pacing Server installation directory/tools/provisioning** folder.
- 2. From the command line, run the following command:

provisioning.bat -host Configuration Server host name or IP address -port Configuration Server port -user Configuration Server user ID -password password for the specified user ID -app Pacing Server Application name

For Linux, use the same command, but instead of **provisioning.bat**, specify **provisioning.sh**.

Tip

• The user and password options may be optional, depending on your Configuration Server settings.

You can also use the **overwrite** option when you run the provisioning tool. In overwrite mode, the provisioning tool replaces old objects with new objects. Pacing-specific objects that already exist will be removed and new objects will be created instead. You will lose any changes you have made manually on pacing-specific objects. The command looks like this: **provisioning.bat -host Configuration Server host name or IP address -port Configuration Server port -user user -password password -app Pacing Server Application name -overwrite**

If provisioning is successful, the following message appears: *Provisioning script successfully finished his work*

Configuration

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- 1 About Configuration
- 2 Pacing targets
- 3 Virtual queue
- 4 Agent groups
 - 4.1 Configure a regular agent group
 - 4.2 Configure a blended agent group
- 5 Pacing service

Configure your pacing targets and how the Agent Pacing Service works.

About Configuration

You must configure your pacing targets and your pacing service to make Agent Pacing Service work with your contact center.

Important

Pacing Service is a single-tenant application—it only has access to the tenant, objects, and transaction list of the tenant it is configured for. In a multi-tenant environment, you can configure a Pacing Service for each individual tenant.

Pacing targets

Each pacing target consists of:

- A media-specific virtual queue
- · A set of one or more agent groups that are associated with this queue

Virtual queue

Although contact centers typically contain many virtual queues, only some of them are appropriate for monitoring by the pacing service. The pacing service only monitors virtual queues that contain:

- A pacing section in the options
- A **media** option in the **pacing** section. The value of this option must be the name of a single media type. You cannot specify a list of media types.

The **pacing** section can include the following additional options:

• **optimizationGoal**—Specifies the highest allowable percentage of proactively triggered interactions that can be closed by visitors prior to an agent joining the session.

- The value must be a float between ${\bf 0}$ and ${\bf 100}$
- The default value is **3** The pacing service considers all suitable virtual queues, regardless of which Switch objects they are associated with.

Here is a sample virtual queue configuration that is accessible in Genesys Administrator Extension:

General								
Defect Dire	Options		Q, Quick Filter		Delete	Add		
Default DNs		Name	\$ Section	\$	Key	÷	Value	
Options		▼ pacing						
Permissions	- 0	pacing \ optimizationGoal	pacing		optimizationGoal		3	
Dependencies		pacing \ media	pacing		media		chat	

Important

When configuring the virtual queue, you must set the value of $\ensuremath{\textbf{Alias}}$ equal to the value of $\ensuremath{\textbf{Number}}$

General	Number *	Type*	
Default DNs	Proactive Chat	Virtual Queue	•
Options	Switch*		
Permissions	MultiMediaSwitch		10 A
emissions	Association	Register *	
Dependencies		True	~
	Alias	Route Type *	
	Proactive Chat	Default	~
	DN Group		

Agent groups

Agent Pacing Service only considers agent groups for processing as part of a pacing target if they include the relevant virtual queue in their list of Origination DNs. The media type specified in the virtual queue is used to limit the *Ready* agents in an agent group to those who can process that media type.

Agent groups can specify more than one virtual queue, and each virtual queue can specify a different media type. For example, **Proactive Chat** could specify **chat** and **Proactive Voice** could specify **voice**. This capability is important for agents in the agent group who have *blended* capabilities—that is, those who can work with several media types simultaneously—as they can be considered for pacing targets that use each of their available media types.

Configure a regular agent group

The following image shows an agent group called **Proactive Voice**. This agent group is associated with a voice-based virtual queue called **Proactive Voice**. The agent group and virtual queue form a pacing target called **Proactive Voice - voice**.

ල් GAX	Dashboard	Configuration	Routing Parameters	Administratio	on Centra	lized Log	gs Engagement Manager						
Home > A	ome > Agent Groups > Agent Groups > Proactive Voice Properties												
Gener	al	Originat	ion DNs										
Super	Supervisors		Number	₽	Type 👙		Switch	Ş	Alias				
Agent	S		Proactive Voice		Virtual Que	MultiMediaSwitch							
Origin	ation DNs	_	-										
Option	าร								(
Permi	ssions												

The next two images show two agent groups that are associated with the **Proactive Chat** virtual queue. The first one is **Proactive Chat** and the second is **Proactive Chat Sales**. These agent groups and the virtual queue form the **Proactive Chat - chat** pacing target.

ල් GAX	Dashboard	Config	guration	Routing Parameters	s Administration Centralized Log			Engageme	nager		
Home > A	gent Groups >	Agent (Groups >	Proactive Chat Pro				💼 Delete	Agent	Group	Clone
Genera	al		Originat	tion DNs							
Super	Supervisors Agents			Number	۵	Type	۵	Switch	۵	Alias	
Agent				Number		туре Ф		Switch	Switch V		/
Origina	ation DNs			Reproactive Chat		Virtual Queu	e	MultiMedias	S	Proactive	e Chat
Option	15										
Permi	ssions										

Configuration

GAX Dashboa	rd Configuration	Routing Parameters	Administration	Centralized Logs	Engagement Manager
me > Agent Grou	os > Agent Groups >	Proactive Chat Sales Pro	operties		
General	Name *				
Supervisors	Proactiv	e Chat Sales			
Agents	Capacity	Table	Quot		
Origination DNs	Cost Con	tract	Site		
Options					
Permissions	Script				
Dependencies					1
	Tenant				

Configure a blended agent group

The next image shows a *blended* Agent Group—that is, an agent group that can handle more than one media type. The **Proactive Blended** agent group supports two virtual queues:

- Proactive Chat, which is part of the Proactive Chat chat pacing target
- **Proactive Voice**, which is part of the **Proactive Voice voice** pacing target

ල් GAX	Dashboard	Configuration	Routing Parameters	Administration	Centraliz	ed Logs	s Engageme	ent Man	ager	
Home > /	Agent Groups >	Agent Groups >	Proactive Blended Prope	erties					i	🖥 Delete
Gener	ral	Origina	tion DNs							
Super	Supervisors		Number 👌		Туре	₽	Switch	₽	Alias	
Agent	IS DNs		😵 Proactive Chat		Virtual Que	Je	MultiMedia	ŝ	Proactive Chat	
Optio	ns		roactive Voice		Virtual Que	Je	MultiMedia	ŝ		
Perm	issions									
Danas										

Pacing service

To install Agent Pacing Service, you need:

- A dedicated Genesys application with a type of Application Cluster
- A set of applications with a type of **Genesys Generic Server**, with one application for each instance of Pacing Service Server.

The Application Cluster application must include:

- Descriptions of all of the options (which are inherited by the nodes)
- Connections to the **Stat Server** and (optionally) **Message Server** applications.

The node-related applications must specify the hosts and ports for their server instances and for their connections to the cluster application. The following screenshot shows some of the setup for configuring a cluster and two nodes.

g GAX Dash	hboard	Configu	uration	Routing Parameters				gage	ment Manager					
Home > Applica	itions > Ap	pplicatio	ons > Pac	cing Service > PacingSe	ervice_Cluster Prop	perties						📋 Dele	te Application	Clone
General			Connecti	ions										
Connections		- 1		Server		\$	Secured	\$	Connection Protocol	\$ Local	¢	Remote 👙	Trace Mode	
Ports				Stat_Server						0		0	Trace Is Turner	1011
Tenants														
Options														
Dependencie	н													/
Application	Options													
										and the second se				

SAX Dashboard	Configuratio	n Routing Parame	eters Administration	Centralize	d Logs	Engage	ment Manager				
Home > Applications >	Applications >	Pacing Service > Pa	acingService_Node_1 Pro	perties						ī	🖥 Delet
General	Port	5									
Connections		ID		Ş	Port	Ş	Connection	ŧ	HA Sync	Listening Mode	
Ports		default			9081		http			Secured	
Options											
Permissions											
Dependencies											
Application Options											

ල් GAX Dashboard C	Configuration	Routing Parameters	Administration	Centralized	d Logs En	gager	ment Manager						
Home > Applications > Applications > Pacing Service > PacingService_Node_2 Properties										Clone			
General	Connect	tions											
Connections		Server		Ş	Secured	\$	Connection Protocol	Ş	Local	¢	Remote	\$ Trace Mode	-
Ports		PacingService_Cluste	r		~				0		0	Trace Is Turned Off	
Tenants													
Permissions													
Dependencies													
Application Options													

The cluster application specifies the following options:

- log Section—Behavior of the logging subsystem
- metrics Section—Metrics produced by the nodes
- pacing Section—Pacing-related configuration, including the optimization goal
- pacingEndpoint Section—Genesys Predictive Engagement endpoint configuration that specifies the URI
 path where Genesys Predictive Engagement listens to pacing REST requests. This path will be
 combined with the base URL specified in the transaction object hybrid_integration
- forward-proxy Section—Connection options for a forward proxy

GAX System Dashboard	Configu	ration Routing Parameters Administration									
Home > Applications > Applications > Pacing > Pacing_Service_900200_Cluster Properties											
General	Applicat	Q. Quick Filter									
Connections		News A	Curries A	V Å	Mahar						
Ports		name	Section 👻	кеу 🤤 пеартенногуозаделитезного	v.o						
Tenants		metrics \ GcFrequency.threshold	metrics	GcFrequency.threshold	24						
Options		metrics \ reporter.console.logFrequency	metrics	reporter.console.logFrequency	30min						
Permissions		metrics \ reporter.messageServer.logFreque	metrics	reporter.messageServer.logFrequency	30min						
Dependencies		metrics \ reporter log.enabled	metrics	reporter.log.enabled	false						
Application Options		metrics \ GcLatency.threshold	metrics	GcLatency.threshold	1000						
		metrics \ reporter.messageServer.enabled	metrics	reporter.messageServer.enabled	true						
		metrics \ reporter.log.logFrequency	metrics	reporter.log.logFrequency	30min						
	metrics \ reporter.console.enabled		metrics	reporter.console.enabled	false						
		▼ pacingEndpoint									
		pacingEndpoint \ targetEndpoint	pacingEndpoint	targetEndpoint	v2/journey/actiontargets/bulk						

Troubleshooting

Contents

- 1 About troubleshooting
- 2 Abandoned statistics are not calculated (always 0)
- 3 Interactions are not delivered to the groups specified in the pacing target

Find solutions to some of the common problems with Agent Pacing Service.

About troubleshooting

Common problems with Agent Pacing Service include:

- Abandoned statistics are not calculated (always 0)
- Interactions are not delivered to the groups specified in the pacing target

Abandoned statistics are not calculated (always 0)

When you configure virtual queue objects, you must ensure that the value of the **Alias** parameter equals the value of the **Number** parameter. For more information, see *Virtual queue* in Configuration.

Interactions are not delivered to the groups specified in the pacing target

Verify that your routing strategy is able to consume the pacing target and virtual queue specified in the **User Data** of your proactively created media interactions.