Luware Nimbus Architecture

Luware
Nimbus

Luware

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1 Introduction

Luware Nimbus is a certified Extended contact center and task routing integration for Microsoft Teams. With Luware Nimbus you can consolidate all your communication, business tools and workflows into Microsoft Teams to effectively manage customer inquiries.

Developed using the latest cloud technology and seamlessly integrated with Microsoft Teams through the Cloud Communications API in Microsoft Graph, Luware Nimbus works with Direct Routing, Calling Plan and Operator Connect and uses the Teams phone system for all contact center calls and call control experiences.

This white paper provides a comprehensive overview of the Luware Nimbus architecture, detailing its technical specifications and key features. After reading this white paper, you will understand:

- **How Luware Nimbus integrates with the Azure cloud and Office 365 environment**
- **How Luware Nimbus integrates with third-party applications**

1.1 Audience

This white paper is intended for Luware Nimbus customers, technology partners, and prospects.

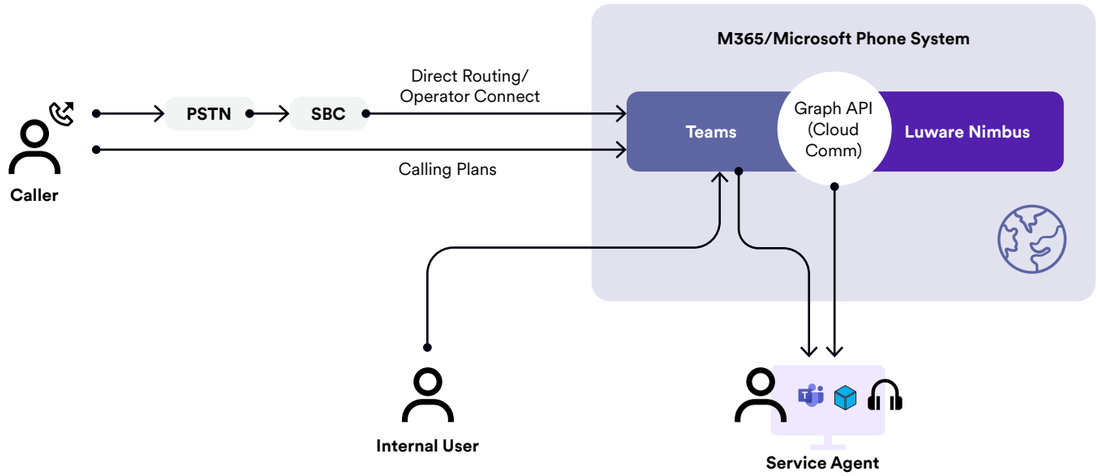
2 Solution Overview

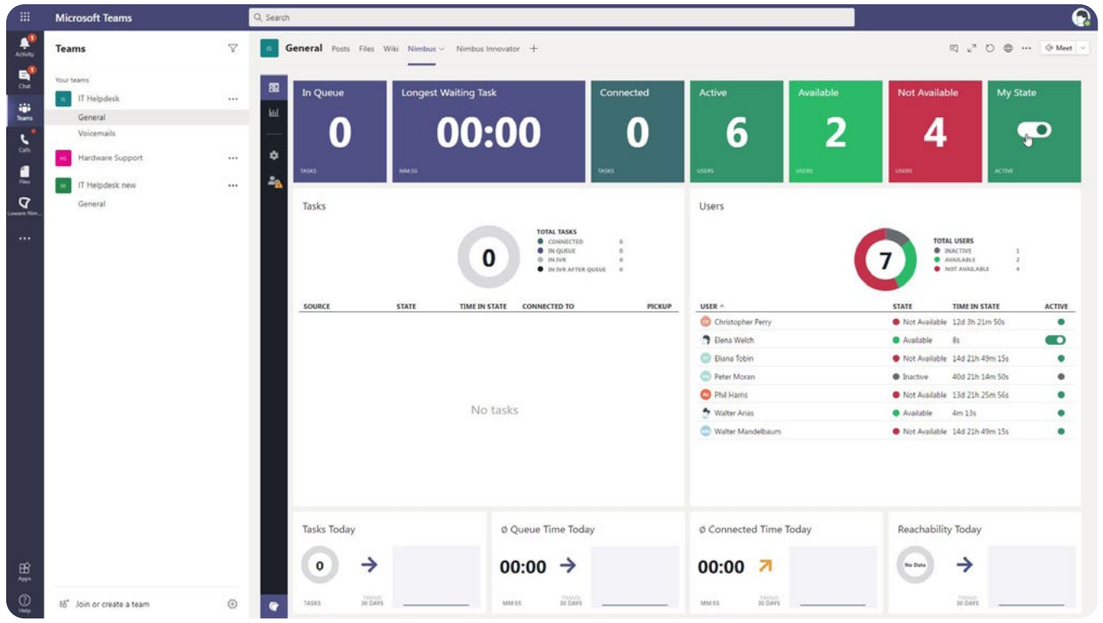
Contact Center as a Service (CCaaS)

Contact Center as a Service (CCaaS) is a cloud-based business communications technology that manages inbound and outbound customer interactions across multiple channels and routes them to the appropriate employee.

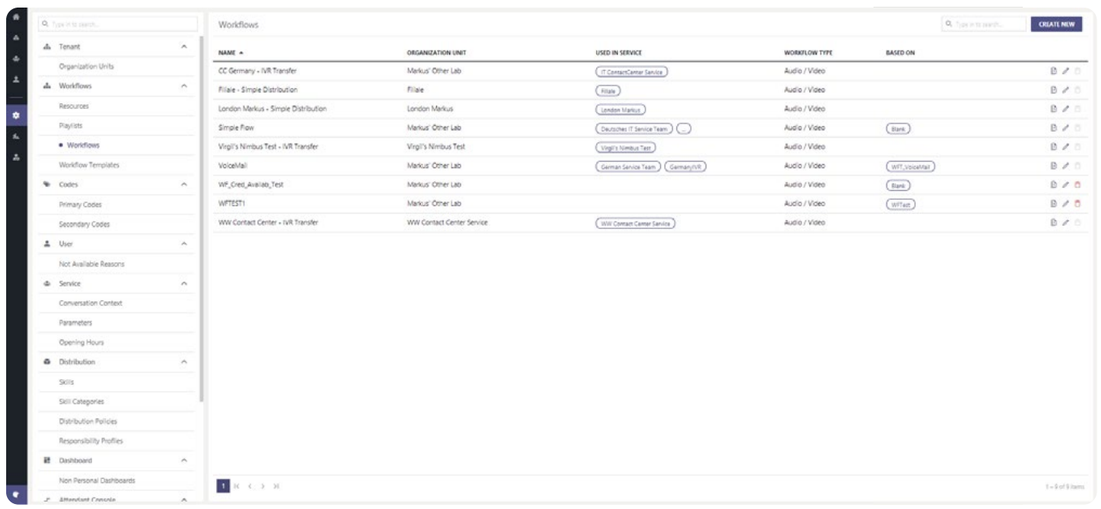
Extended Contact Center integration for Microsoft Teams

An Extended contact center integration for Microsoft Teams is a contact center that integrates with the Teams client through the Cloud Communications API in Microsoft Graph and uses the Teams phone system for all contact center calls and call control experiences.



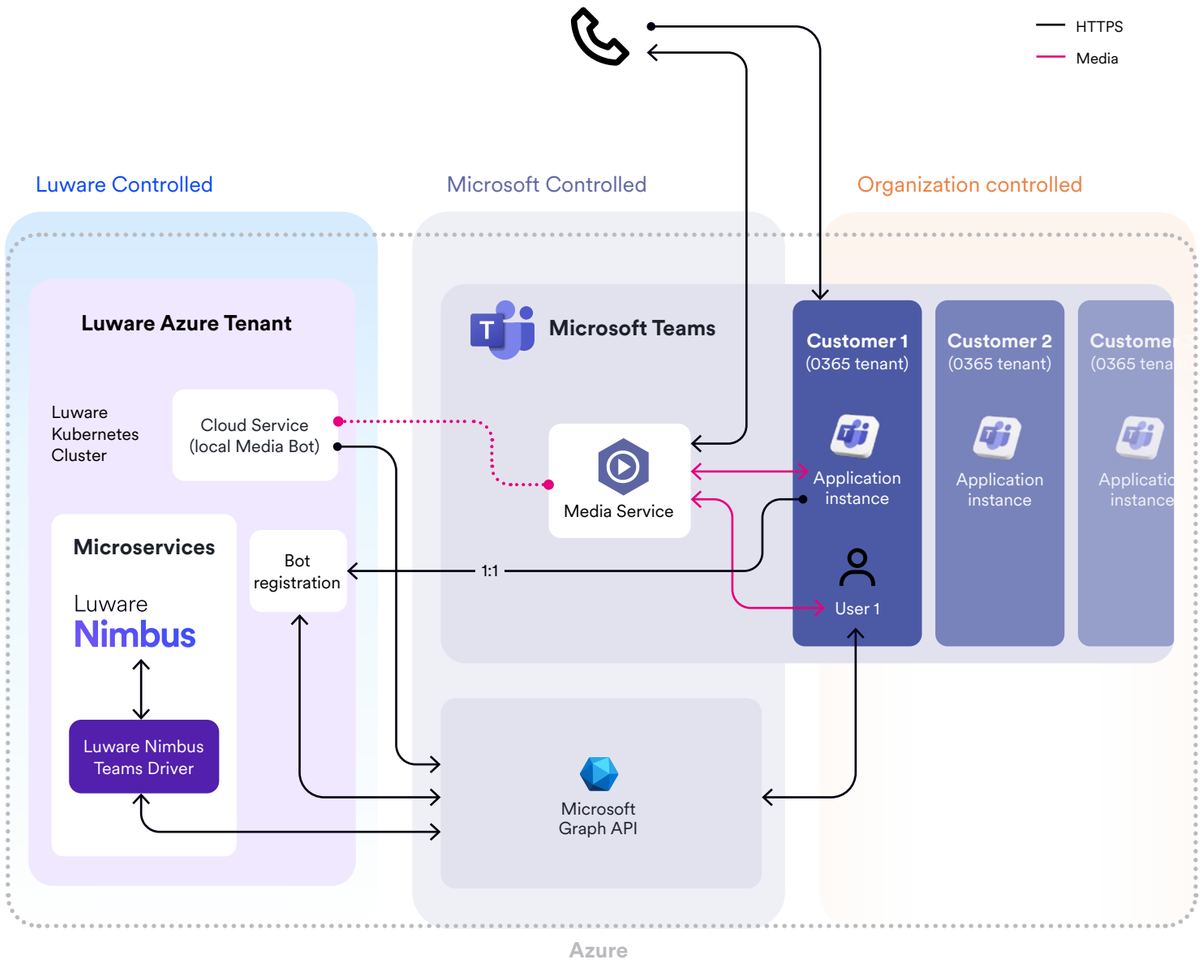


Teams integrated application



A web based environment is available for administration

Luware Nimbus is a certified Extended contact center integration for Microsoft Teams that can easily be accessed within the Teams client and the Teams web user interface. It seamlessly integrates with Teams to enhance the platform and enhances it with intelligent contact center and task routing capabilities.



Teams acts as the host system and when a call comes in, Teams determines if the call is destined for a Luware Nimbus service or agent. If this is the case, Teams notifies Luware Nimbus to handle the call. The media stream remains within the customer's tenant and all further communication between Luware Nimbus and Teams is handled via the Graph API (HTTPS). There is no mandatory additional call toast, no switching between applications. Teams remains the central communication hub for all users.

The benefits of this architecture include:

Robust security

Everything from security to encryption of the call media stream is covered by Microsoft's stringent security protocols.

Seamless integration

All interactions and conversations remain in Teams: the presence status, the call, and the call handling.

Comprehensive reporting

Comprehensive and detailed live and historical reporting about call volumes, user performance, and more.

Centralized administration

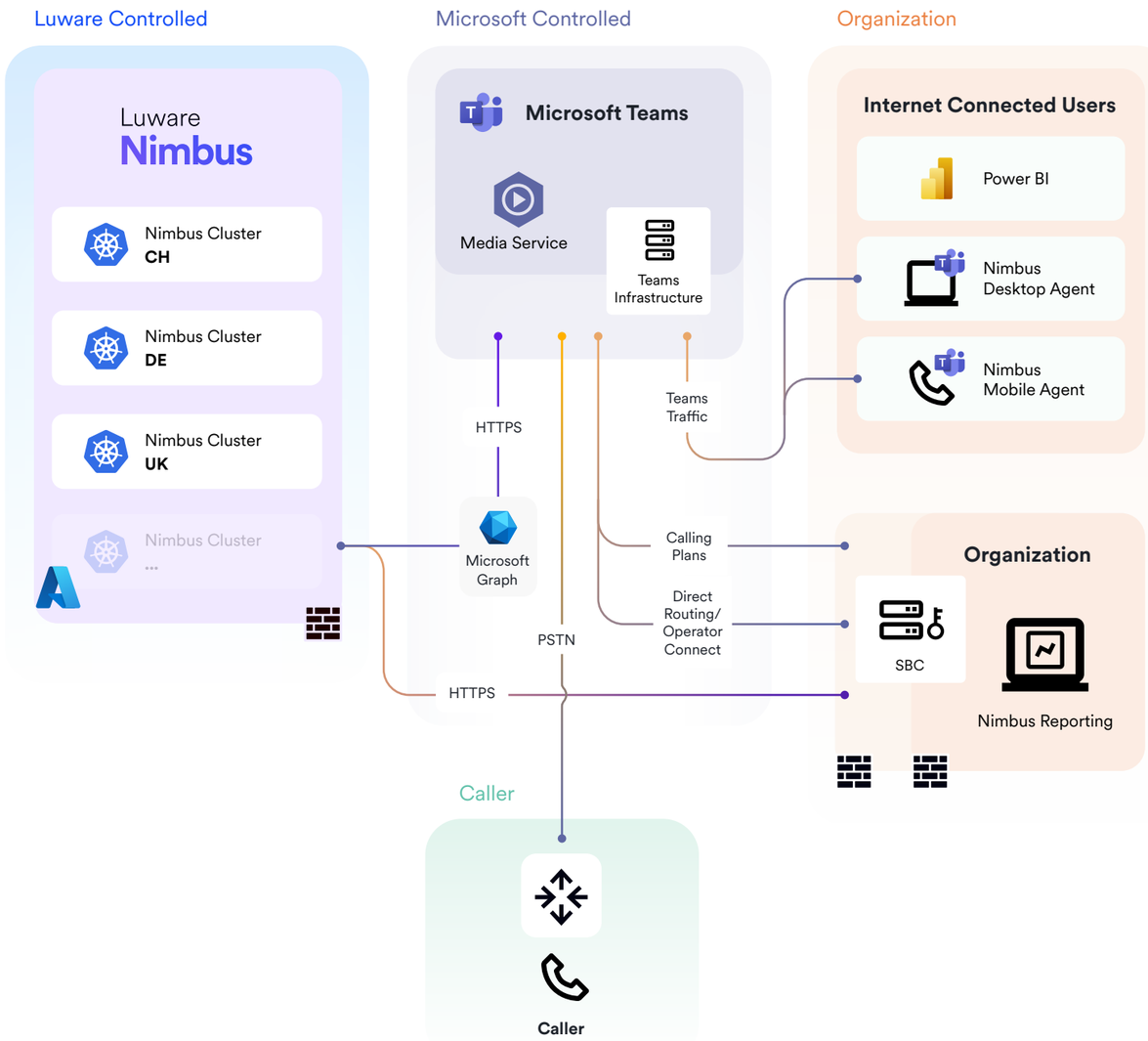
Luware Nimbus docks onto your existing Teams telephony, which remains the central administration of your enterprise-wide telephony.

Data compliance

Luware Nimbus uses the Teams GDPR and internal data policies, simplifying compliance.

Highest audio quality

Both the customer and Teams infrastructure run in Azure, minimizing latency and jitter.



Depiction of the call flow

2.1 Application Landscape

Luware Nimbus is a modular set of applications that can be combined to create a unique contact center solution that the needs of every organization. It's main components are:

Microsoft Teams
Acting as the host system within the customer's M365 tenant, Microsoft Teams provides the foundation for Luware Nimbus.

Microsoft Azure
With clusters strategically located in Switzerland, the UK, and Germany (EU), Luware Nimbus leverages Microsoft Azure for robust and reliable performance.

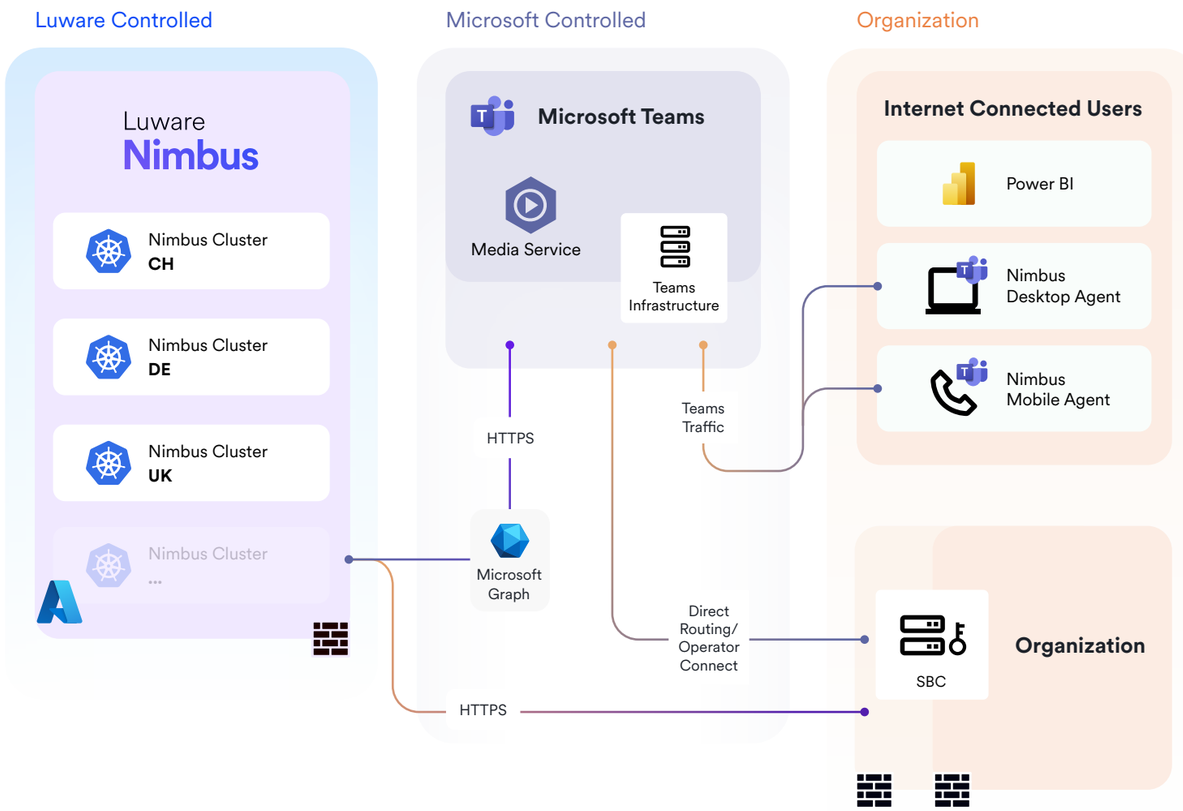
Graph API
Luware Nimbus seamlessly integrates with the Graph API to use the Teams Phone system for all contact center calls and call control experiences.

PowerBI
Integrating with Power BI, Luware Nimbus provides advanced analytics and reporting capabilities.

Power Automate
Through a Power Automate connector, Luware Nimbus integrates and automates processes between applications.

Luware Nimbus is hosted in Microsoft's Azure cloud service infrastructure and harnesses Microsoft's Bot Services and APIs to integrate into the Microsoft ecosystem. Luware Nimbus's environments are configured to harness Azure's traffic and load management toolset and are distributed across multiple geographic regions to enable organizations to comply with their local cloud regulations.

For user authentication, application/infrastructure monitoring, logging, and security, Luware relies on Azure-native services. These are further enhanced for the operational management of the service through additional tooling built into Luware Nimbus. The customer's Azure tenant has all the necessary applications to use Power Automate, access the OData interface, and grant access to the Nimbus application.



2.2 Application Components

The components can be divided into the following general sections:

Components hosted in the Luware tenant.

Components hosted in the Microsoft cloud and not related to the organization's or Luware tenant.

(e.g., Microsoft Graph).

Components hosted in the Organization tenant.

(Note: the Nimbus Assistant is installed separately as a Windows application directly on the user's workstation)

2.2.1 Components Hosted on the Organization Tenant

Nimbus Login
An enterprise application hosted in Azure Active Directory.

Nimbus ACS
An optional enterprise application. If this application is not available, a default connection to ACS is established (Luware ACS connection string is used). If configured, the connection string from your enterprise application must be registered in the tenant settings and will be used in Nimbus Assistant and Instant Messaging.

OData AAD
An optional enterprise application. If you want to access the OData interface (reporting) to extract data for further use, you will need to register this Enterprise Application in your tenant.

Power Automate AAD
An optional enterprise application. If you want to access third-party applications with Power Automate, you must register this enterprise application in your tenant.

2.2.2 Components Hosted in the Luware Tenant

The components listed in the Luware tenant provide the interface needed to do things like access reporting data or connect to the Nimbus Assistant.

2.3 User Interface

2.3.1 Luware Nimbus Teams Application

Luware Nimbus is a custom application for Microsoft Teams. It only has to be added to the corporate Teams applications admin center once by the Teams Administrator. Afterward, it becomes available to the entire organization via the Teams App Store and can be added as a new tab in any Teams channel.

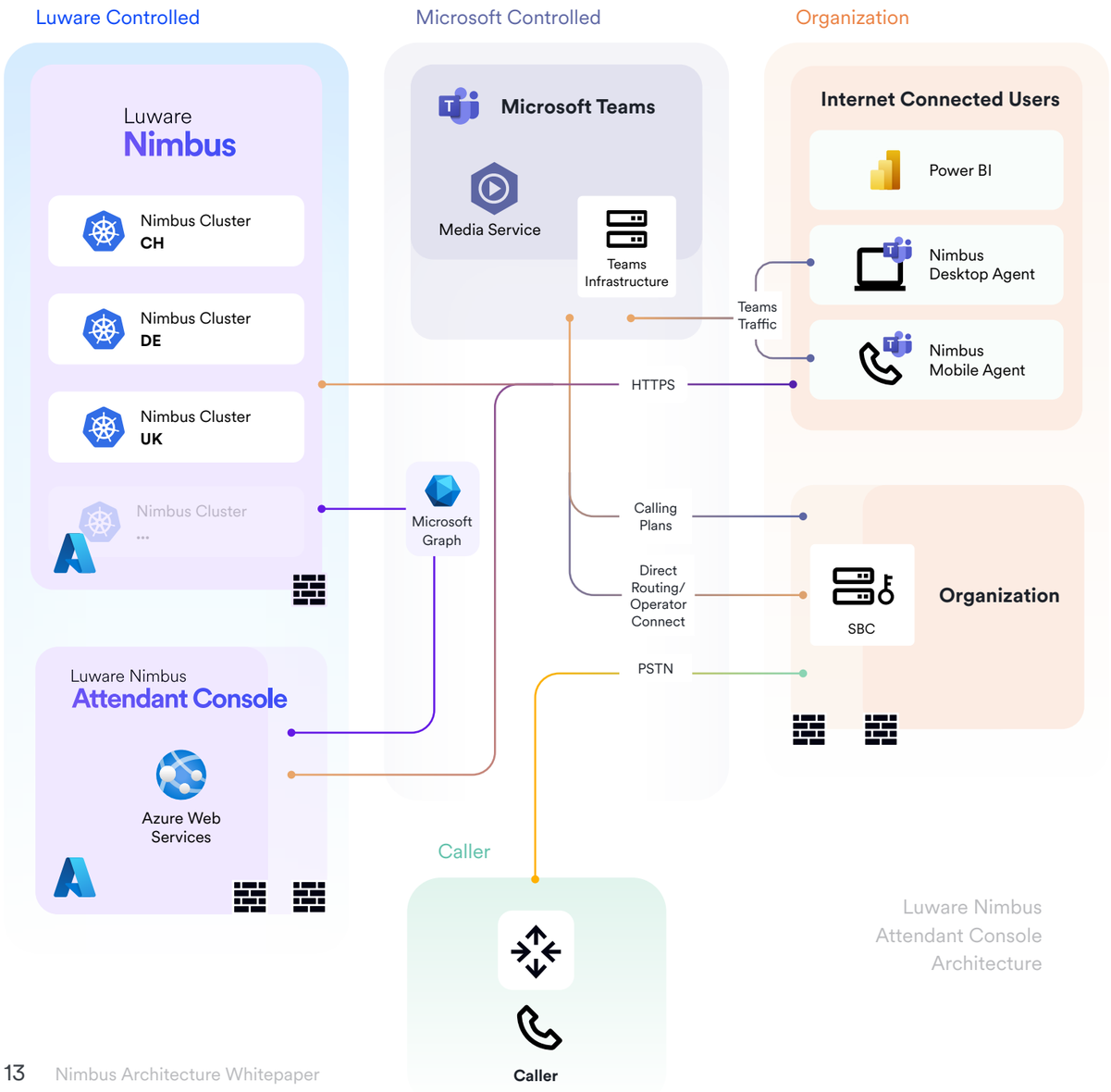
2.3.2 Luware Nimbus Attendant Console

The Luware Nimbus Attendant Console adds an intuitive call management dashboard to Microsoft Teams. It empowers receptionists and operators with tools such as one-click call transfers, a consolidated call queue, and calendar lookup to create a seamless customer experience.

Attendant Console overview inc. setup information

The Luware Nimbus Attendant Console is ideal for:

- Receptionists that as the first point of contact for customers
- Telemarketers that sell products over the phone
- HR representatives that engage with many candidates



Luware Nimbus Attendant Console Architecture

2.3.3 Luware Nimbus Assistant

The Luware Nimbus Assistant is an application that runs on the user's desktop, outside of the Teams platform. It uses Azure Communication Services (ACS) to connect to the Teams infrastructure and provides contextual information about incoming calls without having to keep the Luware Nimbus application open. The Assistant also provides an easy-to-use interface for contact center tasks such as toggling on-call status or specifying unavailable reasons, as well as triggering automated web requests such as updating tickets in an external system when receiving or answering direct or service calls. The Assistant is included in Luware Nimbus Contact Center and can be purchased as an add-on to Luware Enterprise Routing.

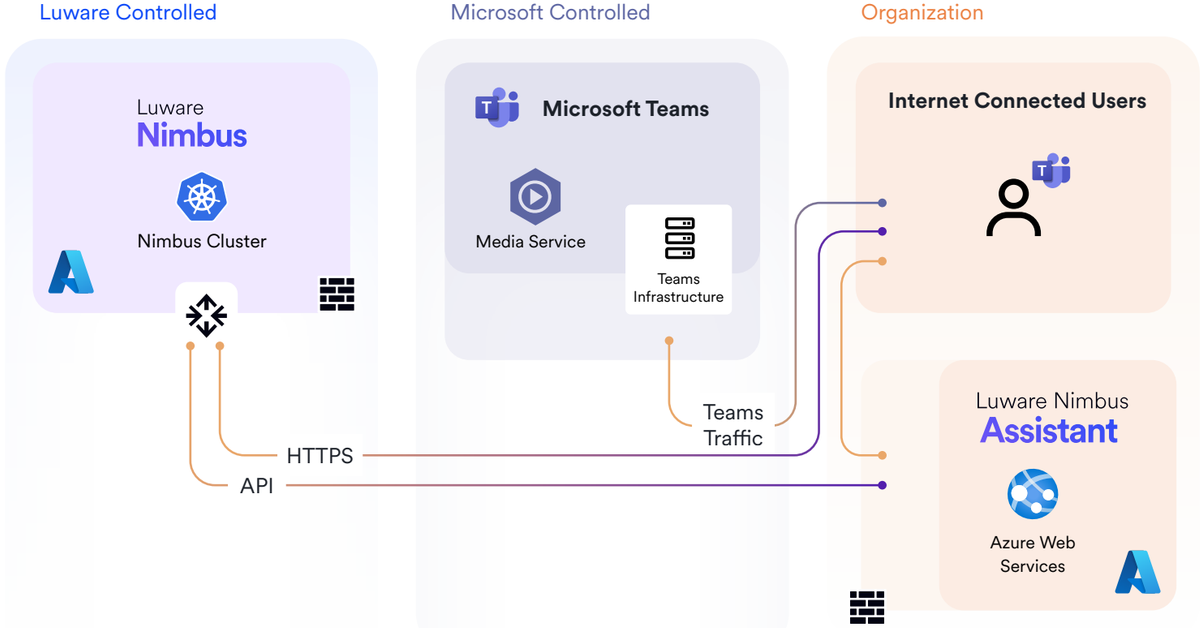
The Assistant application itself consists of two components:

1. A Windows application that must be accessed to update newly added features.
2. A web application that runs in Luware's cloud infrastructure and is regularly updated by Luware.

Luware Nimbus Assistant overview inc. setup information

The Luware Nimbus Attendant Assistant is ideal for:

- Contact Center Agents

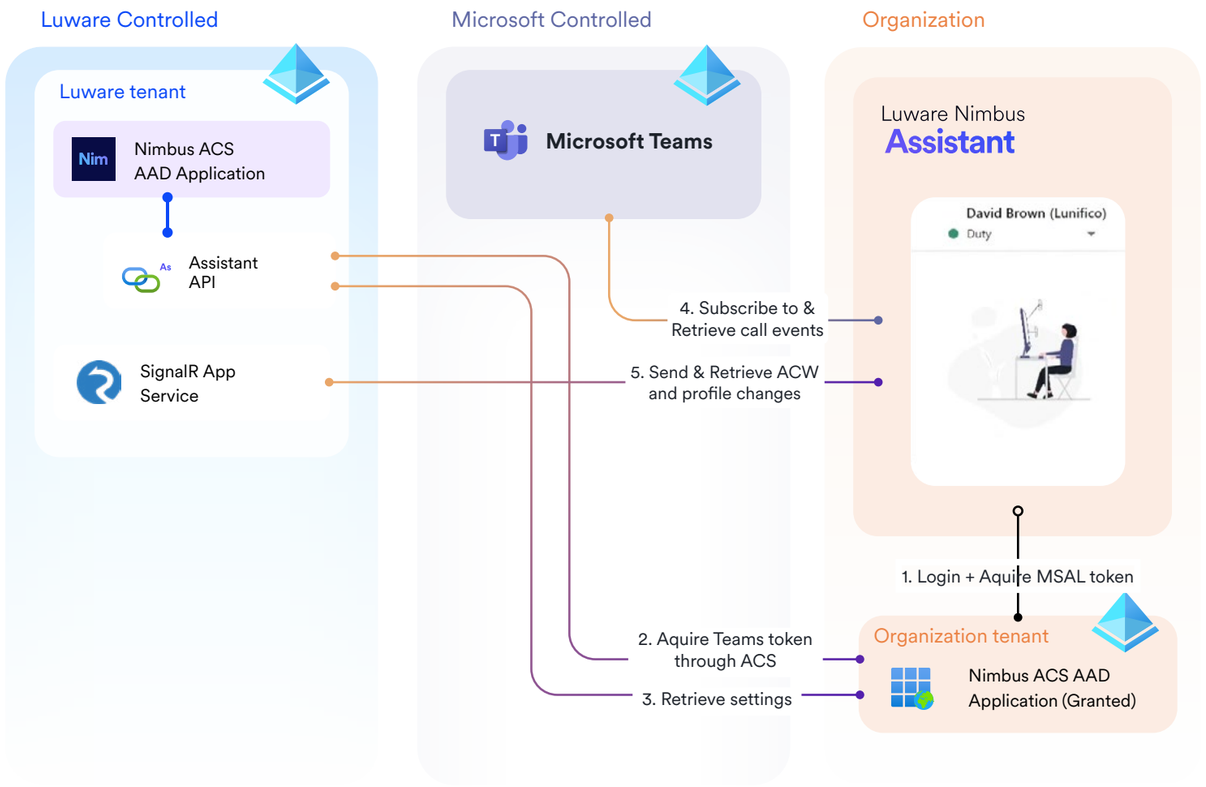


Luware Nimbus Assistant Architecture

2.3.4 Dataflow in the Luware Nimbus Assistant

When the Luware Nimbus Assistant is launched, the integrated web application loads and prompts the user to log in and authenticate using the Microsoft Authentication Library (MSAL). Once authenticated, the Luware Nimbus Assistant receives a Teams token that enables it to subscribe to incoming calls and respond based on the user's configured templates.

The Assistant API is always connected to retrieve and update essential information, while a SignalR connection is used for contact center users to exchange information in near real-time, primarily for profile changes and call-related status.



2.4 Permission Handling

2.4.1 Application Permissions

In order to distribute tasks to available users, Luware Nimbus needs to access information through Microsoft Graph. The Luware Nimbus components need to be granted permissions within the Azure Active Directory. A detailed overview of the permissions on the Graph API used by the Luware Nimbus components can be found here.

It is important to note the distinction between the two high-level types of Graph API permissions - "Delegated" and "Application".

- "Delegated" permissions use user credentials. Access is primarily limited by the permissions assigned to the user account. To access Teams data, the user must have the correct permissions within Teams. Delegated permissions are intended for interactive sessions, such as when you run commands in PowerShell on the fly.
- "Application" permissions use Azure AD App Registrations / Service Principals for authentication. Access is strictly defined by which API scopes have been configured for that Service Principal in Azure AD, and which have been approved by an administrator. Application permissions are a bit more complex to set-up, but are intended to be used by automated processes, such as data collection for reports.

2.4.2 Teams Permission Policies

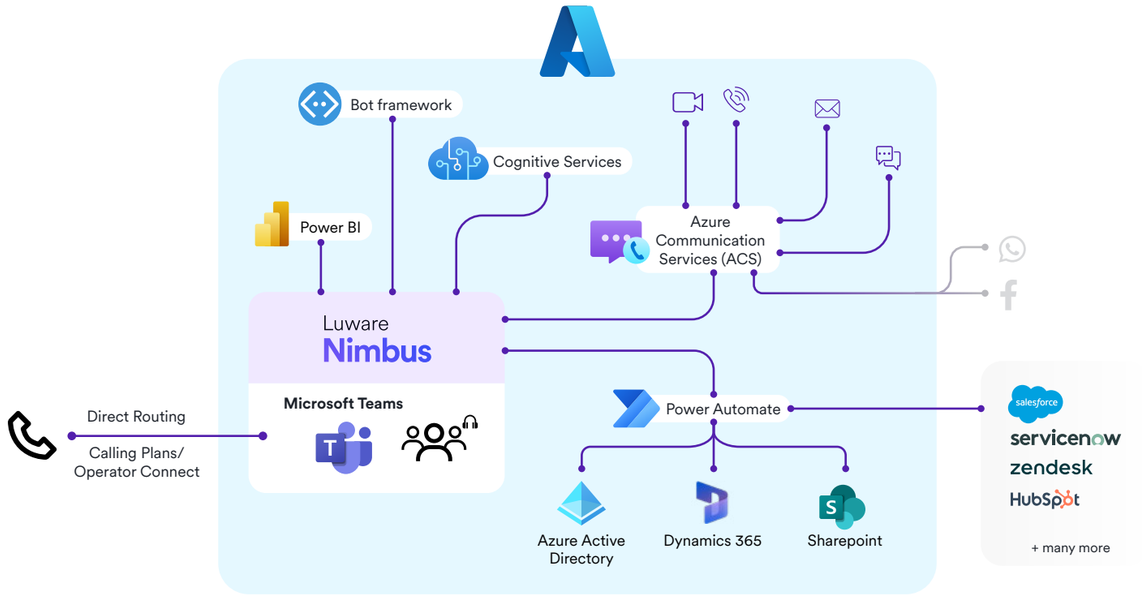
Administrators can use **app permission policies**, **app setup policies**, and custom app policies and settings to configure the app experience for specific users in their organization.

2.4.3 Luware Nimbus Permission Management

Administrators can view application permissions in the Azure Portal. Users can check their permission approval status on the "User page" in Luware Nimbus.

3 Integrations

With full integration into the Azure ecosystem, Luware Nimbus brings enhanced scalability, AI-powered capabilities, seamless data management, and improved customer experiences in a secure and cost-effective environment.



3.1 Microsoft Power Automate

Microsoft Power Automate

Power Automate is Microsoft's low-code automation and integration platform. With Power Automate anyone can connect and automate applications and processes with just a few clicks.

Luware Nimbus uses Microsoft Power Automate to access third-party systems such as CRMs or databases, making it easier to integrate with these platforms and streamline business processes. A custom Power Automate connector enables real-time integrations and after-call automation.

Third-party applications can be integrated either with a **Microsoft-certified Power Automate connector** or using the third-party systems API, which is triggered by the generic Power Automate connector **HTTPElement** in the Power Automate flow.

Third-party products that can be connected to Luware Nimbus include:

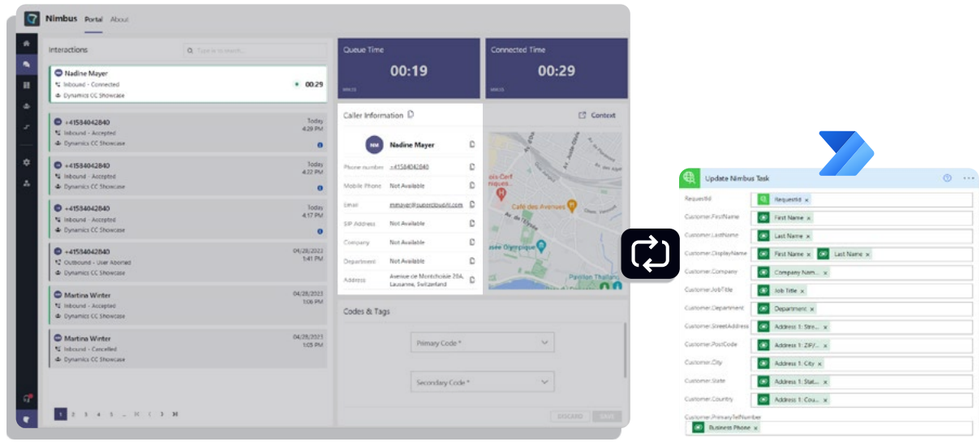
- SharePoint
- Exchange Online
- Hubspot
- Microsoft Dynamics (Microsoft Dataverse)
- Salesforce
- Servicenow
- Web services (http Webrequest Connector)
- Zendesk
- Any other available connector for Power Automate

The Luware Nimbus Power Automate Connector allows information to flow in three ways.

1 Input flow

In an input flow, Luware Nimbus retrieves information from a third-party application such as a CRM and pushes it to Luware Nimbus. This data can then be made available to the user in the Luware Nimbus user intefrace, web page pop-outs (via conversation context) or the Luware Nimbus Assistant (within a service call template).

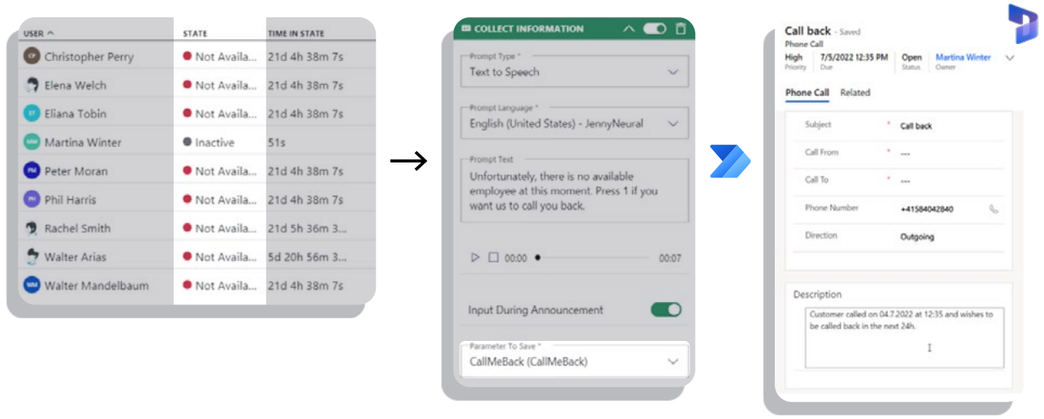
Typical scenarios include: Identifying a caller from CRM system and displaying the name within Nimbus, retrieve details from an SQL server database and displaying the ticket status within Nimbus, or creating a new record in a system such as Salesforce and updating the link to the record displayed in the browser and/or conversation context.



2 Output flow

In an outbound flow, persistent information is pushed from Luware Nimbus to another system, such as a CRM.

Typical scenarios include: Creating a new ticket in Zendesk or any other ticketing-tool, adding an activity to a CRM, tracking the overall call time in SQL System, or pushing lost calls to SharePoint list.



Power Automate integration use cases examples

3 Trigger New Tasks

This kind of workflow is based on the call-back functionality and allows to create a new task within Nimbus, which is then sent to the queue and distributed to an agent.

Typical scenarios include: Creating a task such as “Update a CRM Record” and distributing it to an agent.

3.1.1 Power Automate Connector

Luware Nimbus includes a Power Automate Connector that simplifies the integration process by providing pre-built actions and triggers. This allows you to quickly connect and interact with third-party systems without the need for extensive coding or custom development.

Power Automate connector setup instructions

To ensure service levels, availability and quality, there are limits on the number of Power Platform requests that users can make across all Power Platform products. Service limits are based on normal usage patterns in both five-minute and 24-hour intervals. Most customers don’t exceed these limits.

To help ensure service levels, availability and quality, there are limits to the number of Power Platform requests users can make across all Power Platform products. Service limits are set against normal usage patterns in both five minute and per 24 hour intervals. Most customers won’t exceed these limits.

Power Automate limits

During an active task, Luware Nimbus sends flow triggers that can be used within Power Automate. Flow triggers can listen to a set of events to react to the state of the active task in the Luware Nimbus workflow.

Detailed description of trigger events

3.1.2 Related Flow Actions

Actions are the steps a flow takes in response to the trigger. Actions can be executed within a flow.

Detailed description of flow actions

3.1.3 Microsoft Power Automate Premium License

To use the Luware Nimbus Power Automate connector, you need at least one Power Automate premium license. We recommend using a “service” user that acts as the owner in all Luware Nimbus services and accordingly defines and executes the Power Automate flows.

Microsoft distinguishes between different usage licenses that are described in the official **Power Platform Licensing Guide**. In addition, the rules that apply to the use of a premium license are detailed **here in the Microsoft Documentation**.

Question: A call comes into the Service. The call triggers a flow which uses premium connectors. It updates a Share Point list item. As many users are interacting with that flow, is there a cost per user?

Answer: Only the owner of the flow needs a premium license, as the trigger is automated.

3.2 Azure Communication Service

Azure Communication Services (ACS)

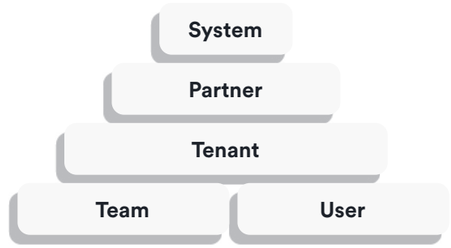
Azure Communication Services makes it possible to add real-time communication capabilities like voice, video, chat, and SMS to a custom application (like Luware Nimbus).

Luware Nimbus uses Microsoft Azure Communication Service (ACS) to communicate with another service.

- The Luware Nimbus Assistant uses ACS to query the presence status of a Teams user.
- The Luware Nimbus workflow engine uses ACS for on-the-fly text-to-speech announcements.
- Luware Nimbus Interact uses ACS to query the presence status of a Teams user and to interact with the Teams capabilities (start video or the share screen, etc.).
- The Luware Nimbus Attendant Console uses ACS to handle calls from different services within one location (transfer calls, etc.).

4 Concepts

Luware Nimbus uses the following domain concept:



System
The top layer and the root of each deployment. Each deployment can have its own administrators defined by an Azure Active Directory group. These system administrators have the permission to manage the complete system and are the only users who can manage partners.

Partner
A Partner is a tenant’s external Microsoft Teams partner, such as British Telecom or Swisscom. Partners can only be managed by system administrators. In addition to the external partner, Luware serves as a default partner that cannot be removed and is assigned if a tenant does not specifically select an external partner. Every partner can define its tenant administrators through an Azure Active Directory group. Members of this group can manage the assigned tenants and their complete configuration.

Tenant
A Tenant represents a Luware Nimbus customer. A tenant can only be associated with one Office 365 tenant (identified by its O365 tenant id) at a time. A tenant is automatically added to the system when a new team is provisioned without an existing tenant in Luware Nimbus.

At the tenant level, you can add an AD group for the tenant. Members of this AD group will act as tenant administrators. In addition, a tenant or system administrator can set an Azure Active Directory group of the partner in a tenant to define the users who support the tenant.

Team
A team represents a Microsoft Teams team, which is extended with the Luware Nimbus functionality. Each team is assigned to one tenant and can be administrated by:

- System Administrator
- Partner Administrator
- Tenant Partner Administrator
- Team Owner

A team cannot be manually added.

User
Users are agents serving a Luware Nimbus service line. Users must be Microsoft Teams users and have a valid telephony license. In the Teams integrated version, a user is automatically added to a tenant as soon as a team is enabled for Luware Nimbus, if this user has not already been added to the tenant. This user object remains in the system until the last team with this user is removed. Users cannot be added manually.

For contact center services, users must be added to the tenant from Azure Active Directory and are selected for services based on their skills and the appropriate distribution policy.

4.1 Tasks

Tasks are an important concept in Luware Nimbus. A task refers to any item that is handled and routed by Luware Nimbus, such as an incoming call. When the task, in this example a call, is routed to a Luware Nimbus service according to the attached workflow, a service session is created. As soon as a task is distributed to a user, a user session is created.

Tasks have the following attributes:

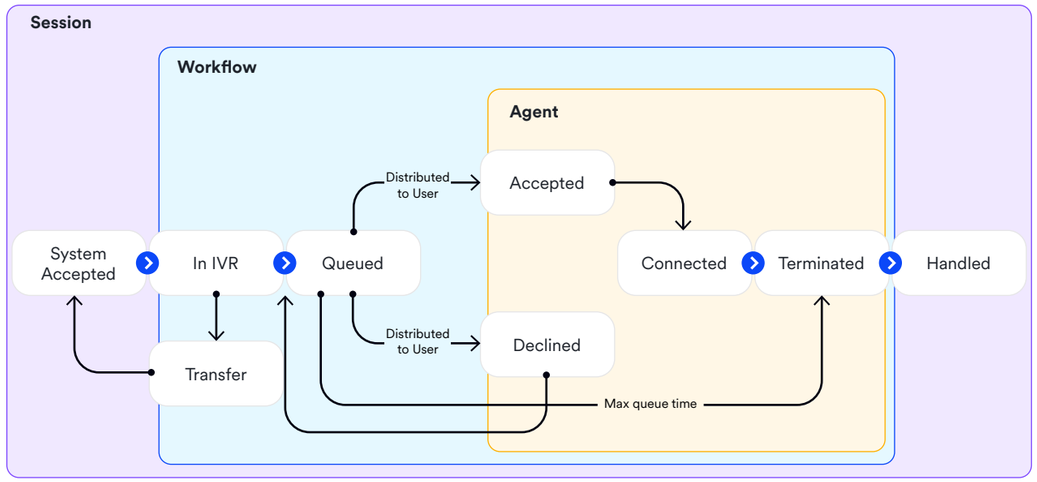
- Modality: The communication channel used for the task, such as call, chat, external Task, or Email
- Direction: The flow of the task, which may be inbound, outbound, or none
- State: The current status of the task, which depends on the modality of the task. See chapter Task States
- Outcome: The resolution of the task, which can be handles or not handled as reflected in the reporting model. See chapter Task Outcomes
- Parameters: A set of settings and system fields that depend on the modality
- Context Parameters: A set of custom fields that provide additional context

4.1.1 Task States

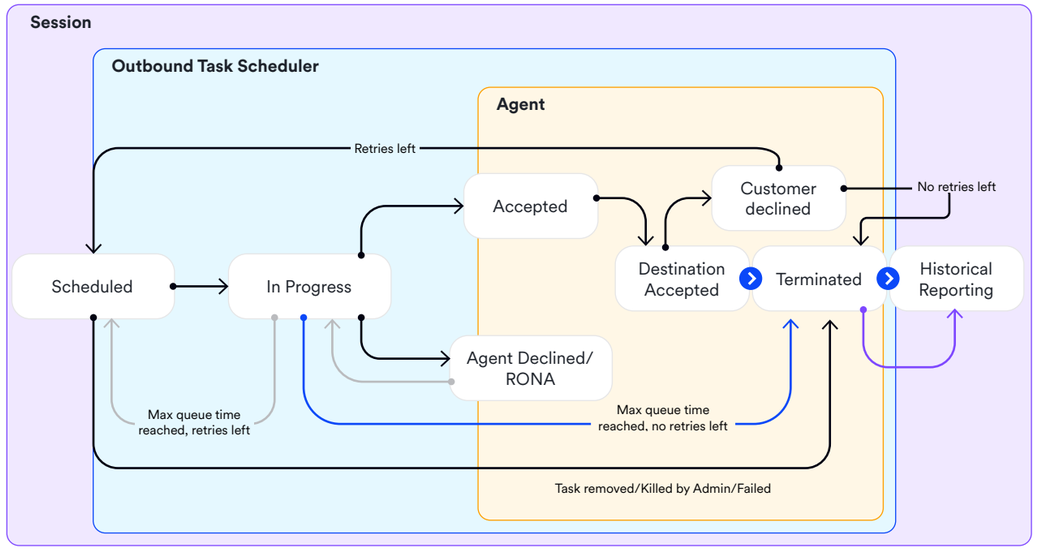
A task can have several states, depending on the call direction.

4.1.1.1 Inbound Call

When a call comes in, the system accepts it and creates a task, initiating a workflow. If there is an IVR in the workflow, the state of the task will switch to “inIVR”. Depending on the IVR options, the task can either be queued or transferred to another service. If the task is routed to another service, its status restarts while the task itself remains unchanged. Once the task enters the queue, its status changes to “queued”. The system then searches for an user to accept the task. If an user accepts, the task’s status becomes “accepted”, and when the user connects with the caller, the status changes to “connected”. If an user declines the call, the status becomes “declined”, and unless the maximum queue time is reached, the call is queued again. When either the maximum queue time is reached or the call is completed, the task’s state changes to “terminated”. To facilitate reporting, the call can be marked as “handled”. Finally, the call data is transferred to the historical data as the last step.



4.1.1.2 Outbound Call



More about transitions of tasks Distribution Order

4.1.2 Session Outcomes

Since a task is always routed to a service, there is a service session associated with every task. When the task is completed, the outcome is added to the service session. If an agent was involved, the outcome for the user session is added to the user session.

The outcomes of service- and user sessions are grouped into “Outcome groups”, which can have several specific values. A detailed list of outcomes and outcome groups can be found in the **Knowledge Base**.

4.1.3 Task Events

A transition from one state to another is called an event. When a task’s state changes, the event is triggered and can be accessed via Power Automate using Luware’s Power Automate Connector.

Besides the transition events, additional events will be fired in the following cases:

- When a task (context) parameter gets updated
- When a task is created or scheduled in the system

4.2 Services

4.2.1 Service Types

Luware Nimbus distinguishes between two primary types of services: User Assignment and Group Assignment. Additionally, there are two distinct methods for integrating Luware Nimbus within Teams: Teams-based integration and skill-based integration.

4.2.1.1 User Assignment

In a Teams based integration, the Luware Nimbus application is added directly to a Microsoft Teams team. The members of the team are the users assigned to that service.

With skills-based services, on the other hand, users are dynamically assigned to a service based on their skills and the service's distribution policy.

Detailed description of the skill-based mechanism

4.2.1.2 Group Assignment

Teams-based services can be licensed through the Advanced Routing or Enterprise Routing licenses. One license is required per Luware Nimbus enabled Microsoft Teams team (i.e. call group). Skills-based services are licensed per user via the Contact Center license

Overview of Luware Nimbus licenses

4.3 Roles

Luware Nimbus adds Azure AD user accounts for system access. Nimbus proprietary roles can be assigned to the user object (RBAC).

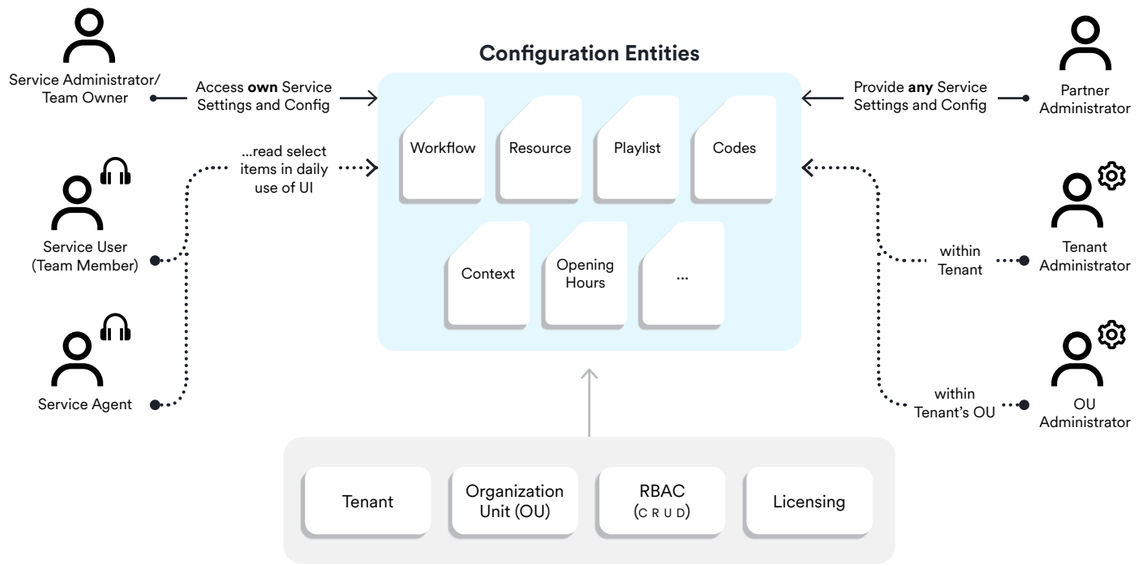
Detailed overview of the Role Access Concept

4.3.1 User Roles (Persona)

When implementing a telephony solution, there are different application areas to consider. Luware Nimbus offers different applications to address the different user groups.

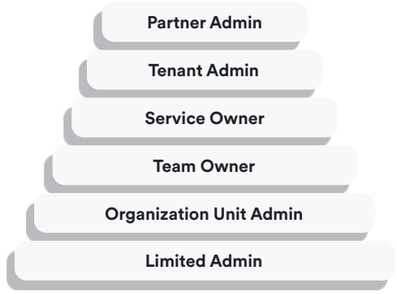
Persona	Module	Capabilities
Receptionist/ Frequent Caller	Luware Nimbus Attendant Console	Intuitive dashboard to easily transfer calls using different methods (consultative, blind, transfer with upstream chat) and check the availability of colleagues
Simple Call Groups	Luware Nimbus Advanced Routing	Workflow editor for creating effective end-to-end processes
Complex Call Group	Luware Nimbus Enterprise Routing/ Luware Nimbus Assistant	Efficiently map complex workflows, and integrate data from third-party systems such as a CRM or database
Contact Center Agent	Luware Nimbus Contact Center/ Luware Nimbus Assistant	Advanced contact center features such as skill-based routing, after-call work and persistent RONA

4.3.2 Admin Roles



Access and Permission concept

Luware Nimbus provides different administrator roles:



Partner Administrator
Users listed in the partner administrator Azure AD group. A partner administrator is the tenant administrator for all tenants associated with a partner.

Tenant Administrator
The user is listed in the tenant administrator's Azure AD group. The tenant administrator has full configuration control within the Luware Nimbus tenant.

Service Owner
Automatically synchronized with Microsoft Teams channel roles. Automatically granted permissions to fully manage each Luware Nimbus service. No manual assignment required.

Team Owner
The team owner of a Microsoft Teams team has configuration rights for the Luware Nimbus service associated with the Microsoft Teams team.

Organization Unit Administrator
An admin with rights to the specific organizational unit to which he is assigned and can, for example, configure workflows for this organizational unit.

Limited Admin
Admin with limited Luware Nimbus tenant rights. A limited admin can, for example, change opening hours or workflows, but cannot change the Service Owner list.

Detailed information on User Access per role

4.3.3 Service Accounts

When connecting external systems, it makes sense to work with service accounts. Azure AD service accounts should be used for:

- Power Automation
- PowerBI Reporting

4.3.3.1 Power Automate Service User

When using Power Automate, it is recommended to define a service user. We recommend that a tenant administrator sets up flows as they have full access to the services and associated data entities within their respective organizational units. This also reduces the risk that flows will stop working when data entities move or become unavailable due to permission restrictions.

How to set up a Power Automate connector

4.3.3.2 PowerBI Service user

To connect to PowerBI you need to be a Luware Nimbus team owner and log-in with your Office365 credentials.

See the **Role Access Concept** to see which roles have access to the OData interface to query data.

How to connect to OData via Postman

4.4 User States

Users can exhibit additional states in Luware Nimbus than the presence states in Teams. User availability is calculated based on a combination of several factors: availability in Teams, availability for a Luware Nimbus service, and call availability.

To distribute a task, Luware Nimbus uses the following Luware Nimbus user states:

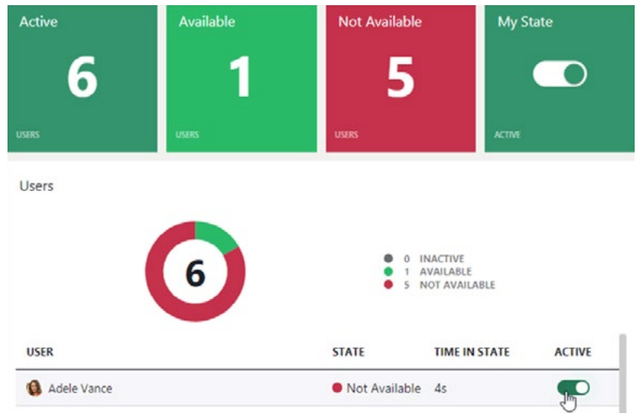
- Selectable
- Unselectable
- Off Duty
- Duty
- Not Ready
- RONA

A user's presence in Teams determines whether he or she is available for selection in Luware Nimbus. For example, a user who is "Do Not Disturb" in Teams will not be "Selectable" in Luware Nimbus. On the other hand, a user who is RONA in Luware Nimbus can still be available in Teams, but will not be selected for a task because of his RONA status. If a user is available in Teams, he can be selected in Luware Nimbus. You can configure the settings to determine whether users can be selected in the presence states "Busy" and "Away".

Detailed overview of the configuration settings that affect Luware Nimbus user status handling and call distribution

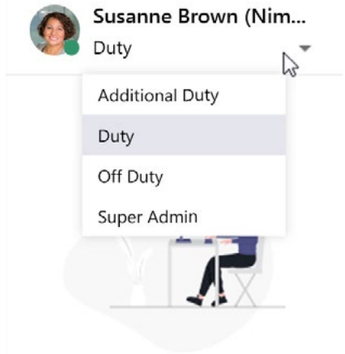
Whether a user is assigned to a Luware Nimbus service depends on the type of service. Luware Nimbus distinguishes between two types of services:

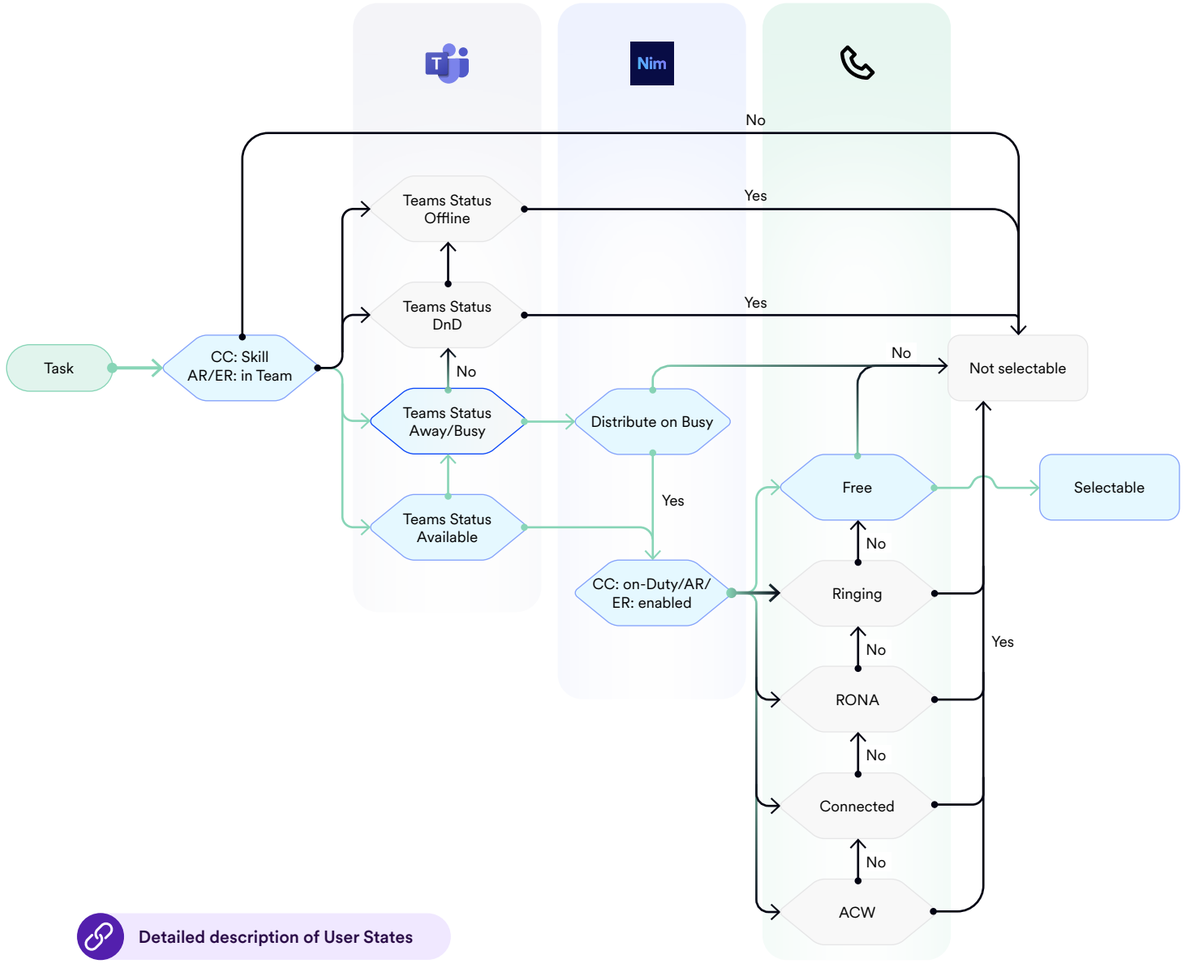
- **Routing Services**
  For routing services, the user is assigned to the Luware Nimbus service if he is a member of the Teams team that has installed Luware Nimbus. The user becomes available to the service by toggling the "Active" switch within the Luware Nimbus service.



- **Contact Center Services**
  For contact center services, the user is assigned to a service based on his or her skills and must select “Active” in the duty profile to become available for a service. Duty profiles allow the user to easily switch between different services.

Once a user is active in a service, the call status determines whether the user is available for the next call.





Detailed description of User States

4.4.1 Extended User Presence

In most scenarios, the basic presence status provided by teams is not sufficient to route calls to the users. Therefore an extended user presence like “Busy → In a Call” or “Busy → In a Conference” is needed. To enable the extended user presence, you need to invite two guests accounts into your tenant. These guest accounts must not be secured with MFA. Instead you can use conditional access to secure those accounts.

Detailed description of Extended User Presence

5 Data

5.1 Data Persistence

Luware uses a network of geographically distributed data centers in the UK, Germany (EU) and Switzerland, all hosted within the Azure cloud infrastructure. This strategic setup serves two main purposes: ensuring redundancy and compliance with local regulations, while minimizing network latency and facilitating backup and recovery processes for our customers.

Each of these distributed datacenters **consists of multiple zones**, although the number of zones may vary by datacenter. These zones contribute to the overall resiliency and availability of our services.

To ensure the durability and availability of data, we offer **several options for disk redundancy**. These options include:

Local Redundancy
Data is replicated multiple times within the same zone.

Zone Redundancy
Data is replicated across multiple zones within a data center.

Geographic Redundancy
Data is replicated across multiple data centers.

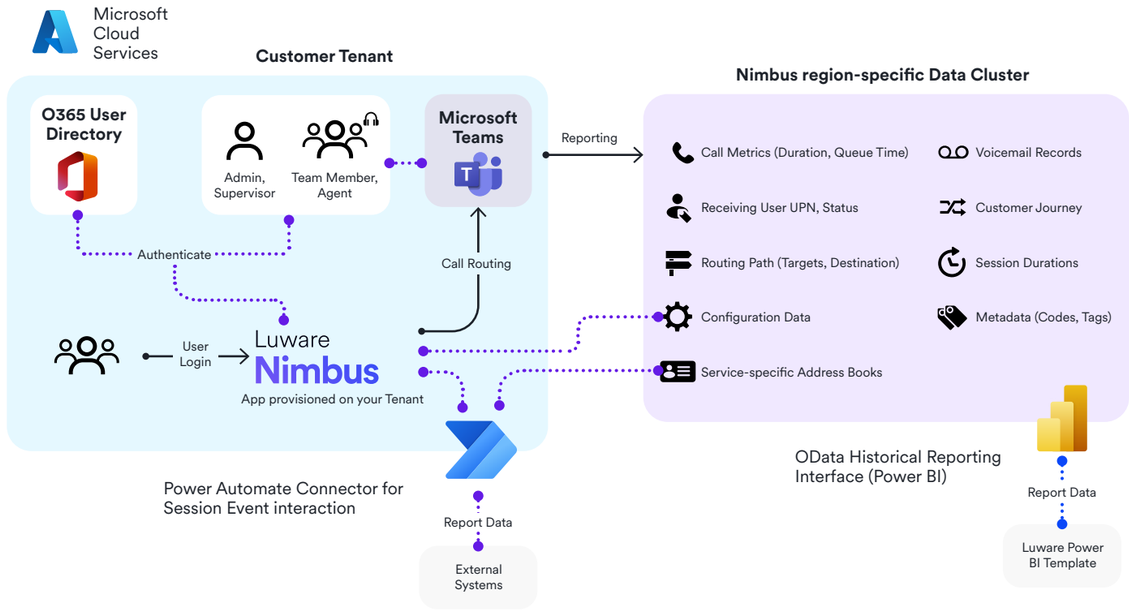
These redundancy options can be combined in various ways to meet specific needs. At Luware, most of the direct-attached disks are configured with local redundancy. Known as Locally Redundant Storage (LRS), this setup replicates data three times within a single data center in the selected region and protects data from potential rack and drive failures. It provides an impressive uptime of at least 99.99% over a one-year period.

Luware also has a disaster recovery plan in the event of a zone or data center disaster.

Call detail records are stored in Luware's long-term storage on a shared Azure infrastructure. Information from third-party systems integrated with the platform is retained for 30 days, but only if it remains relevant to the ongoing conversation. This is done to make it easier to retrieve conversation context for specific calls.

Data sourced from external systems through integrations will be present within the Luware Nimbus application for as long as the context is active. To illustrate, if details about the caller are retrieved from a CRM system, the associated data will persist until the call is terminated. At the point of call termination, Luware Nimbus will automatically discard the associated data object.

In addition, any contextual information relevant to the call, such as links within a CRM system, is retained for a period of 30 days.



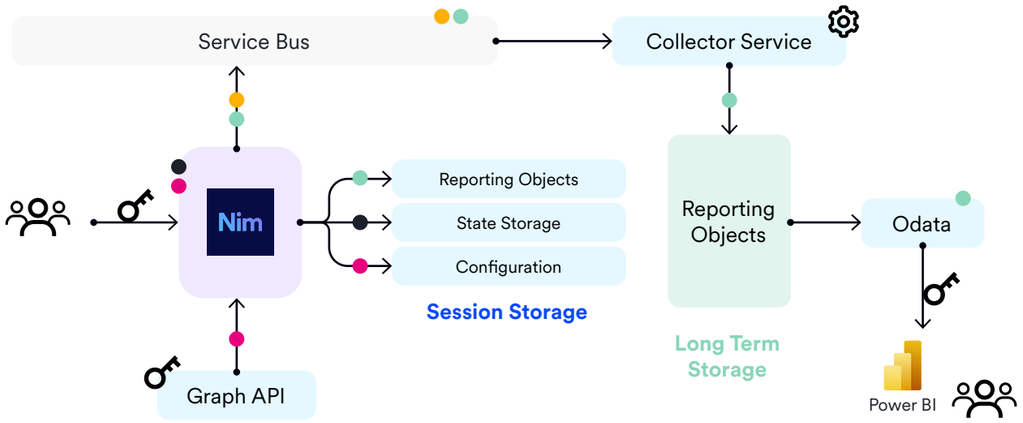
Luware Nimbus and Reporting data collected in Luware Nimbus

5.2 Data Flow

Data is exchanged between Luware's cloud infrastructure and the customer's M365 tenant via the Graph API. The data exchanged depends on the permissions granted for each product (for a detailed overview of the required permissions, click here).

Data exchange is secured by the Graph API permission concept and exchanged data is encrypted. All data exchanged on the Luware Nimbus UI and Luware Nimbus Assistant UI is disposed of when the user disconnects from Teams. Go to the Security chapter to learn more about data level security measures.

Data exchange occurs when logging in to the system, where user and system configuration data is retrieved. It also occurs within the running application on specific events generated by Luware Nimbus. The collector service receives call detail record reports and stores them in long-term data persistence storage. Finally, data is exchanged when a user views the historical report in Power BI and connects to the OData interface.



Dataflow for different data types in Luware Nimbus

- Azure AD Access Token
- State
- Configuration Objects
- Reporting Objects
- Events

5.3 Data Monitoring

Live tasks
Live tasks can be viewed by administrators in the Luware Nimbus Admin Portal or by users working on that Luware Nimbus service in the dashboards.

User behaviour
Users with a supervisor role can monitor user availability through the Luware Nimbus real-time dashboards. User logins are available on the customer's tenant in Azure.

Application logs
Application logs are held by Luware.

5.4 Call Reporting

Data for call reporting is made available through OData. This interface can be used to retrieve the data and push it to a data warehouse. Luware provides a PowerBI template that uses the OData interface. **Certain user permissions have to be considered**. The reporting data is also visualized on the Luware Nimbus UI on several dashboards. Visualizations can display the last 30 days of reporting. Access to the data is granted based on the Luware Nimbus user role using an authenticated user session. Service principle access to the OData interface is not allowed.

Dashboard and Reporting Permissions (Create, Read, Update, Delete)			Supervisor			User		Team/ Service Owner	
			User	Service	Supervision	Team Member	Agent	Owner	Owner Limited
Reporting (OData)	Service	Sessions	-	R				R	R
	User	Sessions	-	R					
	User	States	R						

Detailed description of the reporting model

5.4.1 OData

Open Data Protocol (OData)

OData (Open Data Protocol) is an ISO/IEC approved OASIS standard that defines a set of best practices for building and consuming REST APIs.

You can use the OData interface (e.g. from Postman, Webservices or even Excel) to query data through the RESTful interfaces.

Example of OData interface using Postman

5.4.2 PowerBI

Power BI

Power BI is a self-service and enterprise business intelligence (BI) platform that delivers interactive visualizations and business intelligence capabilities in an intuitive dashboard.

PowerBI can be used for reporting. The data is provided via OData and can be used e.g. with PowerBI Desktop. An appropriate template is provided by Luware.

Luware Nimbus KPIS within the PowerBI template

As of today, no separate license is required to use PowerBI Templates with PowerBI Desktop. The PowerBI Template is included in all Luware Nimbus license forms. The template can be shared within the company via PowerBI Online, which requires at least the Power BI Premium license.

Microsoft Power BI pricing model

6 Performance

The Luware Nimbus infrastructure is hosted on Microsoft Azure, which provides the flexibility to scale capacity up and down as needed. Luware performs proactive capacity monitoring on the Luware Cloud Solutions platform to ensure sufficient resource availability to handle workloads. Customer engagements are evaluated based on their size and complexity and are factored into the capacity planning of the platform. Sizing exercises are performed regularly to respond promptly to capacity expansion needs and to ensure platform stability across the entire platform and solution stack.

Luware Nimbus performance is regularly load tested for up to 10,000 users handling 2,000 concurrent calls per minute.

Measure	Description	Limit
Total users per team	Total number of users that are part of a licensed Luware Nimbus service team which is equivalent to a Microsoft Teams team.	100
Total concurrent calls per team per minute	Total number of calls concurrently being processed within a single Luware Nimbus service team (total of in IVR, in Queue, connected to a user) per minute.	300
Total concurrent calls per user per minute	Total number of calls concurrently being processed within the customer tenant (total of in IVR, in Queue, connected to a user) per minute.	2
Total concurrent requests to the historical reporting	Total amount of simultaneous requests supported by the OData interface for reporting data.	2000

7 Security

Luware Nimbus fully leverages the power of the Microsoft Azure cloud, and all media streams remain within Microsoft Teams and the boundaries of Microsoft's secure ecosystem. Your conversations are protected by the same stringent security protocols that protect the entire Office 365 environment.

The only data stored in the shared Luware Nimbus cloud infrastructure is customer configuration and reporting data (including voice messages). Stringent security standards are in place to protect this information.

To ensure that only authorized users can access information, Luware Nimbus leverages Microsoft's global identity management platform, Azure Active Directory, and industry-standard authentication flows. InfoGuard, the leading independent Swiss cyber security specialist, praises the fact that "no attempts to bypass the authorization mechanisms were successful".

In addition, all data transmitted between Luware Nimbus and the end user over public networks is encrypted according to industry standards, and all system APIs are additionally secured with a token-based authentication system. To ensure that customers can't access each other's information in a multi-tenant environment, regular pen tests are conducted to verify that security barriers cannot be breached.

For a detailed overview of the Luware Nimbus Information Security Policy, please refer to our **Security Whitepaper**.

8 Annex

8.1 Teams Integration Models

Microsoft differentiates between three integration models for Microsoft Teams certified contact center integrations: Connect, Extend and Power.

	Connect	Extend	Power
Summary	The contact center uses SIP connectivity to connect to the Teams phone system infrastructure. Calls are first routed to the contact via an SBC and either stay there (standalone solution) or are sent to Teams (third-party application).	The contact center integrates with the Teams client through the Cloud Communications API in Microsoft Graph and uses the Teams phone system for all contact center calls and call control.	The contact center accesses the Teams functionality directly using the Teams SDKs to bring Teams functionality directly into their contact center solution.
Integration	SIP trunking, presence API	Cloud Communication API in the Microsoft Graph	Microsoft Teams SDKs
User Client	Standalone client or third-party application in Microsoft Teams	Microsoft Teams	Microsoft Teams
Call Connectivity	Direct Routing (SBC)	Direct Routing, Operator Connect, Calling Plans	Direct Routing, Operator Connect, Calling Plans
Call Handling	The call arrives at the contact center solution via the SBC. The contact center solution locates the right person in Teams, then sends the call to Teams over a SIP trunk.	The call comes directly into Teams and stays within the customer's Teams tenant. The contact center doesn't handle the call; it simply tells Teams which user to send the call to.	The call comes directly into Teams and stays in the customer's Teams tenant. The contact center solution can access all call functionality directly in Teams and connect callers to the right user.

Benefits	▪ Can connect to connect different communication systems (e.g. Cisco, Slack)	▪ Teams as central communication hub ▪ Access to the whole Azure ecosystem ▪ Media stream stays inside Teams and is covered by the Teams security and encryption standards ▪ Works with all Teams modalities (voice, video, screenshare, filesharing) ▪ Highest audio quality, minimal latency	▪ One-app and one-screen contact center experience.
Disadvan-tages	▪ Works with voice calls only (video and screen sharing are not available in the Teams client) ▪ Communication platforms are independent of each other. Users may receive a contact center call and a Teams call simultaneously ▪ Call handling is managed by the contact center solution and routed through multiple systems and locations. This can result in latency and poor call quality such as delays and jitter	▪ Features depend on APIs released by Microsoft ▪ Only works within Microsoft Teams	▪ SDKs for building a complete contact center solution not yet availablew

8.2 Glossary

Term	Description
Azure Communication Services (ACS)	A platform that enables developers to add voice, video, chat, and SMS capabilities to their applications using APIs and SDKs.
Calling Plan	A Microsoft service that provides domestic and international calling minutes for Teams users.
Contact Center as a Service (CCaaS)	Contact Center as a Service. A cloud-based model that allows organizations to access third-party contact center solutions over the Internet.
Direct Routing	A feature that allows organizations to use their own telephony carrier or service provider to make and receive calls in Teams.
Extended Contact Center	A type of contact center integration for Teams that uses the Microsoft Graph Communication APIs to integrate with the Teams client and uses the Teams phone system for all contact center calls and call control experiences.
Graph Communications API	A set of APIs that enable developers to create applications that can make calls, join meetings, or send chat messages in Teams using the Microsoft Graph platform.
Interactive Voice Response (IVR)	A technology that allows callers to interact with a phone system using voice commands or touch tones.
Luware Nimbus Assistant	A Teams app that provides users with a personal assistant bot that can handle tasks such as transferring calls, scheduling meetings, or updating presence status.
Luware Nimbus Attendant Console	A Teams app that provides receptionists with a user-friendly interface to manage incoming calls, transfer calls, or access contact information.
Microsoft Graph	A platform that connects data and insights from various Microsoft services, such as Teams, Outlook, OneDrive, SharePoint, etc.
Microsoft Power Automate	A service that allows users to create automated workflows between different applications and services.

Term	Description
Microsoft PowerBI	A service that allows users to create and share interactive dashboards and reports using data from various sources.
OData	Open Data Protocol. A standard that defines a set of best practices for building and consuming RESTful APIs.
Operator Connect	A feature that allows organizations to connect their existing telephony operators to Teams without using Direct Routing or SBCs.
Service Account	An account that is used by an application or a service to access resources or perform actions on behalf of a user or an organization.
Task	A unit of work that can be assigned to a user or team in a contact center solution.
Tenant	An instance of Azure Active Directory that represents an organization or a customer in the Microsoft cloud.
User	A person who manages inbound or outbound calls and other customer interactions for an organization.
Workflow	A sequence of steps or actions that define how a task or a process is executed in a contact center solution.

9 Links

Link	Description
General	
Youtube	Luware's YouTube channel with live demos
Luware Nimbus Knowledge Base	Reflects the newest development state of Luware Nimbus
Basic Functionality	
Feature Overview	Functionality overview of the different Luware Nimbus applications
Conversation Context	Open a website whenever a Luware Nimbus call is accepted
Service Call Templates	Service call templates in Luware Nimbus
Skills and Responsibilities	Concept and description of skill categories, skills, and responsibilities
Distribution Policies	Describes distribution policies and how to add them to a service
Distribution Order	Call routing dependent on distribution policies
Distribution Types	Description of distribution types (broadcast / direct conferencing)
Workflows	
Workflows	How to customize the handling and distribution of incoming calls according to your preferences
Workflow Templates	How to use Workflow templates or create your own
Workflow Activities	Overview over workflow elements in Luware Nimbus
Use Case: Creating a Call	Example of a call workflow
Power Automate	
Power Automate Use Cases	Examples of how Luware Nimbus can be extended via Power Automate
Microsoft Power Automate Connector	Setup of the Luware Nimbus Power Automate connector
Trigger Events	List of Power Automate trigger events available in Luware Nimbus
Use Case: Consolidate Teams usage reports into Luware Nimbus reporting template	How to feed direct Teams calls into the existing Luware Nimbus reporting template
Power Automate Licensing	Power Automate licensing explained in detail

Link	Description
Reporting	
Luware Nimbus Reporting Model	Overview of the Luware Nimbus reporting model
Luware Nimbus KPI Calculations	Description of the KPI calculation in the PowerBI template
Power BI Template Usage	Description of KPI templates
Extension	
Assistant	Overview of the Luware Nimbus Assistant
Roadmap	
Luware Nimbus Roadmap	2023 Luware Nimbus Roadmap

Luware