AMELIA

Cognitive Agent

Amelia 6.9.0 Release Notes
(Document version 1.0)

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Document History

Author	Version	Date	Comments	Final Approval?
Amelia Research & Development	1.0	October 14, 2024	Added bug fixes and new functionality for 6.9.0 release	Yes

1. Highlights by Release

This document briefly lists significant changes to Amelia because of 6.8.x version releases. A detailed list of all new features and bug fixes are listed in the next section of this document.

1.1 BREAKING CHANGES

CORE BPN

Phased Execution is an optional domain-level feature. Users can configure whether the system should override any triggered responders. You can configure this feature by edge and conversational turn. For example, if utterances trigger Amelia Answers, you can override the default responder. This lets the conversation continue. However, you can no longer retrieve the Amelia Answers metadata in this situation.

The solution updates the responseMetadata method of the FAQ Services. The object returned by the documentFaqResponseMetadata method includes a .paragraph() accessor. It retrieves the same data as the .answer() accessor in the object returned by the responseMetadata method. Otherwise, the responseMetadata accessors are the same for the documentFaqResponseMetadata method. (AM5-11536)

1.2 RELEASE 6.9.0

ADD CONVERSATIONS DASHBOARD WITH FILTERING AND DETAILED VIEWS

The Conversations Analytics left-edge button links to a new Conversations workspace. This workspace displays all conversations for an Amelia instance. You can filter conversations by date and domain. This makes it easy to find specific conversations and then view their details. (AM5-11965)

ADD AN INITIAL SETUP WALKTHROUGH EXPERIENCE FOR AMELIA ANSWERS

An Amelia Answers workspace message box guides users to configure a cognitive provider. Then guides them to process their first document successfully. (AM5-11917)

2. List of All Changes

This section provides a detailed list of all new features, improvements, and bug fixes.

2.1   RELEASE 6.9.0

2.1.1   Amelia Analytics

NEW FEATURES
- Implement All Conversations Dashboard with Filtering and Detailed Views (AM5-11965)

BUG FIXES
- When creating conversations export file to date can be before from date (AM5-11610)
- Long-running Conversation Exports due to Stuck Conversation Issue (AM5-11945)

2.1.2   Amelia Answers

NEW FEATURES
- Implement Initial Setup Experience in Amelia Answers (AM5-11917)

IMPROVEMENTS
- Incorrect Deployed Version Display in UI When Current Version Fails (AM5-11938)
- Add Confirmation Dialogue to Refresh Source Button (AM5-11963)
- Rename QA in Predict to Amelia Answers (AM5-11967)
- Parallelize or Batch Query Expansion and Decomposition calls (AM5-12122)
- Improve logging for Weaviate segment mismatch issue (AM5-12263)

BUG FIXES
- HTML tags from Amelia Answers are not being displayed in the chat (AM5-11567)
- Responses tab incorrectly labeled as Queries (AM5-11866)
- faqService responding with incorrect values for responded and responder fields (AM5-11875)
- Incorrect and random responses from Amelia Answers after specific configurations (AM5-11930)
- Modified and modifier fields not updated upon document reindex (AM5-11993)
- checkSync method appending redundant errors to document summaries (AM5-12003)
- Responses sometimes are being recognized as harmful even when explicitly referenced in the source (AM5-12024)
- Document indexing process not failing fast keeping document in indexing state forever (AM5-12059)
- Missing French translation for some parts of UI (AM5-12116)
- Some of the segments are not in the vector store after QA Pairs reindexing (AM5-12183)

2.1.3   Conductor CLI

BUG FIXES
- Issue with Property Set replacement during migration using Conductor (AM5-11539)
- Parent Domain setting not applied to Child Domains during migration (AM5-11549)

2.1.4   Contact Center

NEW FEATURES
- Allow supervisor to configure available widgets for agent (AM5-11918)

BUG FIXES
- Unable to scroll down and go to other pages in escalation teams (AM5-12002)

2.1.5   Core Admin UI

BUG FIXES
- Confirmation message is missing after we create a user (AM5-11343)
- Incorrect French translation in domain settings (AM5-12117)
- Action in UI bundle is not working if added second time (AM5-12216)
- Sometimes Entity Settings are not populated in Entity form (AM5-12305)
- Handle change doesn't work for custom UI properties with object type (AM5-12306)

2.1.6   Core BPN

BUG FIXES
- Reprompts counter is not reset to 0 in pre-escalate flow causing escalation (AM5-5071)
- Repeat dialog act not matching on relevant utterances (AM5-5281)
- Trigger the intent is not working from Greeting flow (AM5-6305)
- Variables in Custom Cards Not Reflecting in Teams Channel (AM5-8931)
- Conversations are not auto-closing after 60 minutes of inactivity (AM5-11242)
- Subsystem response metadata unavailable when Phased Execution is enabled (AM5-11536)
- Initial ask task triggers next ask task responses instead of verbiages (AM5-11692)
- Admin UI does not display linked BPNs to respective intents (AM5-11722)
- Conversations stay in suspended mode after when using Wait task in DEB (AM5-12080)

2.1.7   Core Framework

IMPROVEMENTS
- Implement bulk close API for conversations (AM5-11780)
- Do not timeout Amelia login when AIOps login times out (AM5-12034)

BUG FIXES
- OutboundNlpProcessor dropping spaces in responses (AM5-9753)

- Conversation self-continuation issue in voice interactions (AM5-12066)

2.1.8 Core LLM

IMPROVEMENTS
- Improve descriptions for cognitive tasks (AM5-11371)
- When new cognitive task is created set default cognitive provider should be pre-selected (AM5-12022)

BUG FIXES
- LLM Classifier Fails to Use Dataset Utterances for Intent Classification (AM5-11230)
- Getting bad request when testing internal cognitive provider (AM5-12017)

2.1.9 Core NLU

IMPROVEMENTS
- Improve Evaluation Statistics for models trained with LLM Classifier (AM5-11304)

BUG FIXES
- In Evaluate, output prediction scores for builtins.fallback and expected classes are incorrect (AM5-1859)
- Close conversation dialog act triggered by 'Reopen previous conversation' utterance (AM5-9068)
- Dialog Act Close Conversation Retraining (AM5-10055)
- Remove ontology learning from escalation learning (AM5-11899)
- Disfluency message showing after script task (AM5-11958)

2.1.10 Core Response Pools

BUG FIXES
- URL in anchor tag is getting xml encoded in response pool (AM5-11629)

2.1.11 Core Security

IMPROVEMENTS
- Update a few dependencies for CVE fixes for Amelia Core (AM5-12227)

BUG FIXES
- Local File Path Disclosure from Server (AM5-7319)
- Address XSS on response pools page (AM5-11998)

2.1.12 Core System Entity

BUG FIXES
- Currency entity doesn't work as expected (AM5-12075)

2.1.13 Core UI

IMPROVEMENTS
- Dashboard to review agent answers (AM5-12016)

2.1.14 Custom UI

IMPROVEMENTS
- Improve searchability and semantic grouping of properties in UI bundle configuration (AM5-10491)

BUG FIXES
- Chats remain open when closing the browser window (AM5-11700)
- Unable to clear numeric value in UI bundle configuration (AM5-11986)
- Title is cut in amelia answers details (AM5-12189)
- Changes in chat-overlay should not be cached (AM5-12217)

2.1.15 DEB

IMPROVEMENTS
- Remove auto-center block on click in DEB canvas (AM5-10496)

BUG FIXES
- Intents Link to BPN Instead of DEB (AM5-9346)
- Duplicate fields when using auto-generate for single-selection widget (AM5-11890)
- Unable to modify the value of 'Response time limit' in an ask task. (AM5-12037)
- Unable to modify ASK task within DEB from entity to basic (AM5-12240)

2.1.16 Digital Employees

IMPROVEMENTS
- UI throwing validation error for optional Audience and ClientSecret fields in Authorization (AM5-11953)

BUG FIXES
- Show intent display name on predict results (AM5-11843)
- Proper validation error required for uploading incorrect file types (AM5-12015)
- UI issues with scrolling in Model properties tab (AM5-12030)

2.1.17 Gateway Google Chat

BUG FIXES
- Google Chat widgets not working for decorated text, columns, dropdowns (AM5-10917)

2.1.18 Gateway Rest

IMPROVEMENTS
- Remove weak TLS/SSL ciphers from REST gateway (AM5-12031)

2.1.19 Gateway Service

IMPROVEMENTS
- Implement permanent solution for Agent Last Name issue when using Gateway Service (AM5-11249)
- Update a few dependencies for CVE fixes for Amelia Gateway Service (AM5-12249)

BUG FIXES
- Amelia Gateway Service Redeploying Escalation Gateway in a loop (AM5-11835)
- Last name of agent does not get replaced when a new agent joins and the new agent does not have a last name (AM5-11979)

2.1.20 Gateway Slack Rest

NEW FEATURES
- Migrate Slack Gateway's Use Of files.upload API to new API (AM5-12156)

2.1.21 Integration Service

IMPROVEMENTS
- Update a few dependencies for CVE fixes for Amelia Integration (AM5-12248)

2.1.22 Java SDK

IMPROVEMENTS
- Add SDK changes to Semnet element status and related APIs (AM5-10859)
- Add SDK changes for conversation summary and resolution APIs in Agent and Journey Analytics (AM5-11224)

2.1.23 LLM Model Server

BUG FIXES
- Internal LLM model returning bad Humanizer outputs (AM5-11903)

2.1.24 Translation

BUG FIXES
- Incorrect display of Unicode characters in chats due to translation (AM5-12094)

3. Component Versions

This section provides a detailed list of the version numbers for each component included in this release.

Table 1. Component Software Versions

Type	Amelia Release									
	6.9.0									
Custom User Interface	6.0.26									
HAproxy	2.8.3									
Percona	8.0.29-21.1									
Java JDK	11.0.24									
Redis/Redis Sentinel	7.0.13									
AV Gateway	1.2.8									
Syntaxnet	1.0.11									
Duckling	6.9.0									
amelia-coref-service	6.9.0									
amelia-assignment-en_us	5.7.0									
amelia-robertaqa-en_us	5.7.0									
amelia-facial-recognition	6.9.0									
amelia-embedding-service	6.9.0									
amelia-LangChain-service	6.9.0									
amelia-weaviate-service	1.24.6									

Table 2. Gateway Versions

Type	Amelia Release									
	6.9.0									
Alexa	6.9.0									
Amazon Lex	6.9.0									
Amazon Connect Escalation	6.9.0									
Cisco ECE *	6.9.0									
Digital First Omnichannel	6.9.0									
Email	6.9.0									
Facebook Messenger	6.9.0									
Five9	6.9.0									
Firebase Cloud	6.9.0									
Genesys Cloud Chat	6.9.0									

	Amelia Release											
Type	6.9.0											
Genesys PureCloud	6.9.0											
Genesys PureConnect	6.9.0											
Genesys PureEngage	6.9.0											
Gateway Service	6.9.0											
Google Chat	6.9.0											
InContact Escalation	6.9.0											
LinkMobility	6.9.0											
LiveEngage Messaging	6.9.0											
Meta Workplace	6.9.0											
Microsoft Teams	6.9.0											
Oracle Digital Assistant	6.9.0											
Oracle Service Cloud (REST)	6.9.0											
PEGA Chat	6.9.0											
REST	6.9.0											
Salesforce Chat	6.9.0											
Salesforce Escalation	6.9.0											
ServiceNow Chat Classic	6.9.0											
ServiceNow Agent Chat	6.9.0											
ServiceNow Escalation	6.9.0											
ServiceNow Virtual Agent	6.9.0											
Slack REST (V2)	6.9.0											
Solidus	6.9.0											
Sprinklr	6.9.0											
Symphony	6.9.0											
Twilio	6.9.0											
Twitter	6.9.0											
Webex	6.9.0											
Webex Teams	6.9.0											
Zendesk Sunshine	6.9.0											
Zendesk Sunshine Escalation	6.9.0											

* ECE: Cisco Enterprise Chat and Email

Table 3. Amelia Integration Framework (AIF) Versions

	Amelia Release											
Type	6.9.0											
Integration-Service	6.8.0											

4. Amelia 6.9.x System Architecture

This diagram reflects the current architecture of the Amelia software system.

End User — External Load Balancer

External Load Balancer — Admin

Conversation Gateways

Custom UI

SDK

Voice

Teams, Slack, Twilio, UCWA

amelia-rest-gateway

amelia-gateway-service

amelia-gateway-service
- Multitenant gateway service
- Hosts plugins for a variety of endpoints
- Can connect to multiple Amelia systems and download/deploy multiple gateway configs

Inbound conversation messages (GPRC)
Outbound conversation messages

End User Front End

Internal LB (haproxy)

amelia-user-web

amelia-user-web
- Start of conversation entry points
- Serves Amelia User and MIND UIs
With **amelia-admin-web**:
- Share user authentication
- Perform endpoint checks for user authorities

Shared Services

ipsoft-av-gateway

Session and Messaging (redis-session)

amelia-account-service

conversation events

ADB (PXC)

amelia-account-service
- Users, User Groups, Roles
- Authentication Systems

amelia-langchain-service

Weaviate

amelia-langchain-service
- Parses and indexes input sources using built-in, configurable loader classes, stores embeddings in Weaviate
- Retrieves relevant source chunks from Weaviate during FAQ
- Calls LLM with successive, 'chained' prompts to build final output

authz/rbac admin (gRPC)

Admin Services

Internal LB (haproxy)

amelia-admin-web

write knowledge

amelia-admin-web
- Serves Amelia Admin UI
- Knowledge Management of processes, intents, entities, etc.
- System settings admin: domains, users, roles, escalation teams
- Active Conversations, Metrics

amelia-escalation-service

amelia-escalation-service
Handles escalations happening in Amelia:
- Notifications
- Agent Selection Algorithm

deploy (gRPC)

escalations

amelia-batch-service

metrics

amelia-batch-service
Periodic batch processing jobs for:
- Metrics and summaries computations
- Maintenance and cleaning

Config data: routes and endpoints

amelia-admin-service

models

amelia-admin-service
- Initializes KDB with default resources
- Conversation event handlers
- Scheduled training and deployment jobs for classifiers and other resources

KDB-M (PXC)

Conversation Services

amelia-engine-service

amelia-engine-service
- Handles conversations with the users.
- Processors for Natural Language Understanding.
- Response generation
- Dispatches conversations events for amelia-admin-service, e.g. conversation started event
- Once conversation closes, amelia-batch-service extracts summary information for KDB export/metrics

amelia-duckling-service

amelia-duckling-service
- Uses the open-source duckling service created by Facebook
- Currently handles multi-lingual date normalization within Amelia

External LLM Providers (optional)

OpenAI (Cloud)

Azure OpenAI (Cloud)

Translation Services (optional)

Google Translate (cloud) (gRPC)

Azure Text Translation (cloud) (REST API)

SDL (on-premise) (REST API)

Amelia Hosted (Shared GPU Infrastructure)

amelia-paraphrase-generator

amelia-paraphrase-generator
- Generates an output sentence semantically identical to input sentence while using different choice of words
- Uses Google T5 to generate paraphrases from original sentences

amelia-question-generation-service

amelia-question-generation-service
- Generates list of question-answer pairs from an input paragraph
- Generates answers with ROBERTA model followed by BART model to generate questions based on generated answers and input paragraph.
- Uses BERT based QA evaluator to score and rank the

amelia-facial-recognition

amelia-facial-recognition
- Based on training Dlib and Spoof Detection Model

LLM Model Server

Witty Server Amelia Chit Chat

LLM Model Server
- A TorchServe based model server hosts Large Language Models
- It currently hosts two models:
  - amelia-llm (LLAMA2-13B variant)
  - amelia-embeddings (LLM based embeddings)

Attribute Store (redis-cdb)

For **amelia-engine-service** and **amelia-model-server**:
- Fast key/value store for BPN transient variables, conversation attributes, coref data, etc.

amelia-model-server

amelia-model-server
- Serves trained classifier models

read models

amelia-syntaxnet (For Language Pack)

parsers (gRPC)

amelia-syntaxnet
- Provides linguistic analysis of sentences, used by rest of system
- Computes part-of-speech tags and syntactic dependency relations
- Uses a separate model for each language

read knowledge (process definitions, etc.)

amelia-coref-service

amelia-coref-service
Coref resolution service accepts tokenized utterance spans with corresponding speaker ids and returns clustered mention-antecedent pairs with the predicted mention score.

amelia-autocorrection-service

amelia-autocorrection-service
Grammar and spelling

KDB-S

replication

amelia-embedding-service

amelia-embedding-service
- Generate embeddings (vector representations) for sentences
- Accepts text and locale and returns a float vector(768) for each text
- Embeddings based on sentence transformers.

Integrations (Backend)

amelia-integration-gateway-service

amelia-integration-gateway-service
- Handles remote integration service registration with Amelia
- Distributes flows for installation to authorized hosts
- Distributes execution requests to integration services
- Exposes a generic HTTP listener and accepts raw requests to be adapted by an integration flow.

amelia-integration-service

amelia-integration-service
- Uses Apache Camel with flows in spring XML dialect
- Flows can be invoked synchronously from BPNs
- Can deploy on-prem and connect to SAAS Amelia
- Adapts Orchestrator requests to/from external API formats.

amelia-orchestrator

amelia-orchestrator
- Maintains a routing table that routes inbound requests to appropriate destination.
- Utilizes amelia-integration-service adapters to transform requests/replies from/to external system format.
- Provides a real time view into requests/threads of execution flowing through the system.

Live view of threads/reporting

Inflight Threads/Requests redis-odb

Elastic

LEGEND

KDB-Master
KDB-Slave
gRPC
Redis
REST

Customer Systems

ticketing, REST, ldap, etc.

- Receives requests from integration-serivce.
- Sends requests to integration-gateway-service which routes requests via orchestrator to correct endpoint.
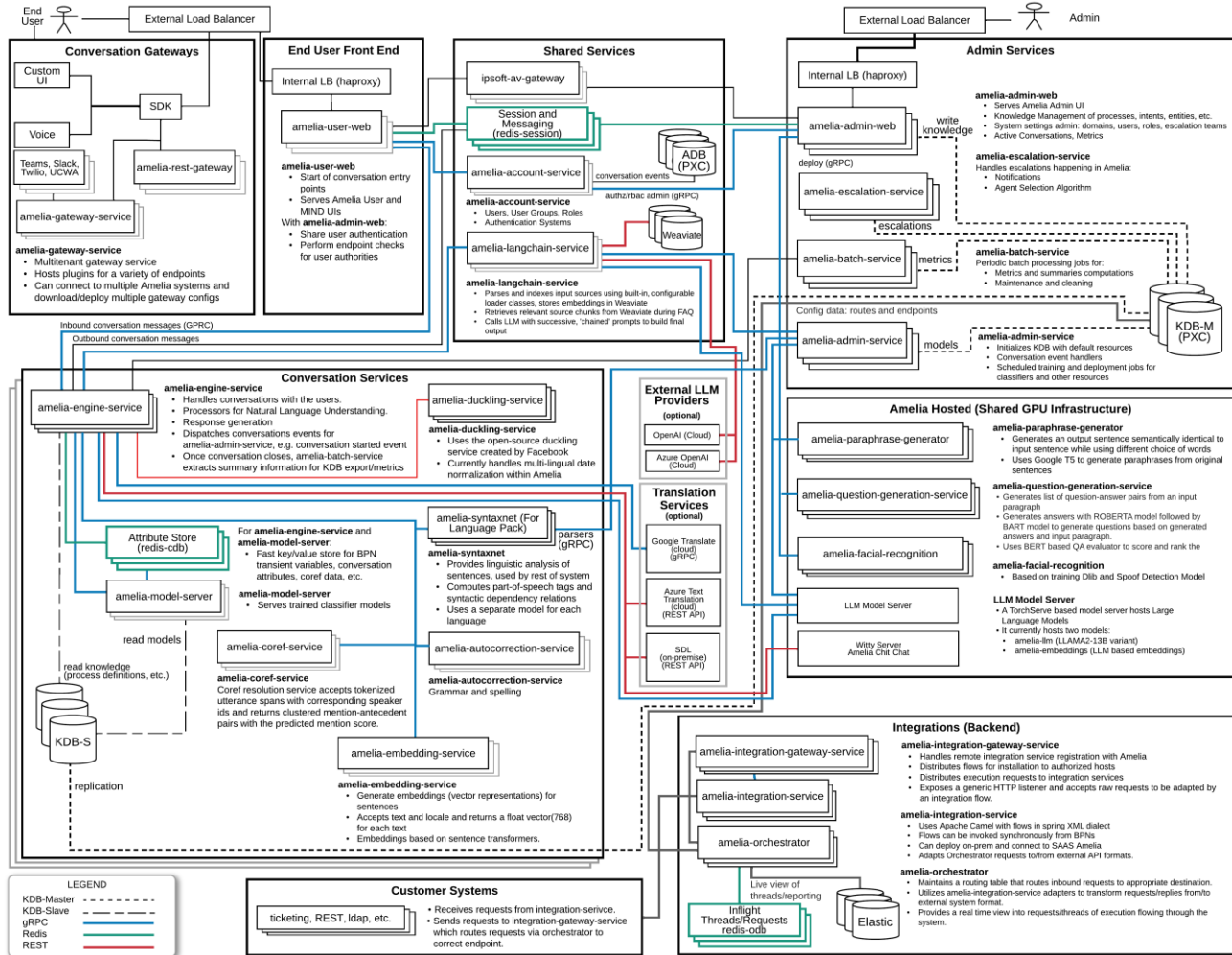
Figure 1. Amelia 6.9.x System Architecture

5. Glossary

This table describes common terms used in these release notes.

Table 4. Glossary of Terms

Term	Definition
ABA	Amelie Builds Amelia is a feature that dynamically builds digital employees.
AIML	Artificial Intelligence Markup Language (AIML) is an XML dialect used by natural language software agents. Elements marked up with AIML tell agents what to say in different situations and, in some cases, how to say their response.
API	Application Programming Interface is a set of subroutines, data structures, communication protocols, and other tools used to build software. An API provides the building blocks used by programmers to build software applications.
AVS	Amelia Voice Service is a technology to deliver Amelia functionality through voice interfaces.
Business Process Network (BPN)	Defines process-based interactions between Amelia and a user, for example, unlocking an account or resetting a password.
Classifier Model	A data set Amelia creates with intents, entities, utterances, and other data to understand conversation used to describe a topic. Algorithms process the input data to evaluate the importance and weight of words and phrases in the data set.
CMS	Content Management System is one or more software programs used to create, manage, and publish digital content.
CPU	A central processing unit (CPU) is the most important processor in a computer. Its electronic circuitry executes arithmetic, logic, controlling, and input/output operations.
CQA	Clarifying Question Answer (CQA) is the ability for Amelia to determine potential confusion within utterances and ask questions to clarify the user intent in the utterance.
CSS	Cascading Style Sheets (CSS) is a style sheet language used to specify the presentation of documents written in a markup language such as HTML or XML.
CSV	Comma Separated Values is a text file where row data is separated (delimited) with commas.
DEB	Digital Employees Builder is a feature that allows users to create flows that map Amelia's responses within conversations.
DNN	A Deep Neural Network (DNN) Is an artificial neural network that mimics the complex neural networks in animal and human brains. DNNs have multiple layers between input and output with each layer evaluating utterances for words and the relationships between words.
ELMo	Embeddings from Language Model (ELMo) is a Natural Language Processing (NLP) model used to evaluate utterances to determine the meaning of a single word based on words around it. For example, the word bank has different meanings in the utterances, "The bank down the street was robbed" and "We had a picnic on the bank of the river." The words robbed and river indicate the word bank has a different meaning in each sentence.
Entity	Data collected to complete an intent goal, for example, a date of birth for a loan application.

Term	Definition
EQA	Elaborate Question Answering (EQA) involves asking dynamic follow-up questions for more information when an utterance doesn't converge on an intent.
FAQ	A list of frequently asked questions related to a specific topic.
FQT	Fully Qualified Task, a task that has been evaluated as acceptable to be processed to resolution.
HMR	Hot Module Replacement is a feature of webpack software module bundler to allow modules to be exchanged, added, or removed while a software application runs.
IdP	An identity provider (IdP) is a system entity that issues authentication assertions with one or more single sign-on (SSO) profiles using SAML (Security Assertion Markup Language).
Intent	The user's goal, for example, to qualify for an auto loan. The goal requires a process to complete.
JEXL	Java Expression Language is library to provide dynamic scripting features in applications and frameworks written in the Java programming language.
JSON	JavaScript Object Notation is a text data storage standard that uses name (key):value pairs to organize data in an ordered list easily processed by many programming languages.
JWT	JSON Web Token is an open standard that defines a compact and self-contained way to securely transmit information between parties as a JSON object.
LDAP	The Lightweight Directory Access Protocol (LDAP) is an open cross platform protocol used for directory services authentication. LDAP is a language application used to communicate with directory services to authenticate users.
LLM	A Large Language Model is a form of artificial intelligence trained on vast amounts of content to understand a broad range of topics and return answers. A language model is a machine learning model trained to predict the order of words in a sentence to extract meaning.
LP	Language Pack, software that when installed provide Amelia with the ability to speak a specific language.
MIME	MIME (Multi-Purpose Internet Mail Extensions) is an extension of the original Internet e-mail protocol to let people exchange different kinds of data files on the Internet, for example, audio, video, images, application programs, and other kinds, as well as the ASCII text handled in the original protocol.
Negative Utterances	An unlabeled training utterance, negatives help Amelia learn the difference between tasks and knowledge she is trained on and things she is not. They help Amelia understand words that are similar but have different unrelated meanings than utterances used to trigger the intent goal and Amelia's processes.
NER	Named Entity Recognition is part of extracting information to locate named entity mentions in unstructured text then classify the entities into categories, for example, person names, organizations, and date/time expressions.
NLP	Natural Language Processing (NLP) mixes computer science, information engineering, and artificial intelligence to program computers to analyze and understand natural human language, the unconstructed casual way people talk.
NPE	NullPointerException is a Java RuntimeException. In Java, a special null value can be assigned to an object reference. A NullPointerException is thrown when an application attempts to use an object reference that has the null value.
PSA	The Personal Speech Act (PSA) is a classifier used to identify insults and compliments.

Term	Definition
SAML	Security Assertion Markup Language (SAML) is an open standard used to exchange authentication and authorization data between an identity provider and a service provider. SAML is an XML-based markup language.
SDL	Software and Documentation Localization is an on-premises language translation service that provides secure automatic translation.
SpEL	Spring Express Language is a programming language that supports querying and manipulating an object graph at runtime.
SSL	Secure Sockets Layer is a security technology to establish an encrypted link between a web server and web browsers.
SSO	Single sign-on (SSO) is an authentication scheme to allow users to log in with a single ID and password to any of several related yet independent software applications. SSO passes an authentication token seamlessly to applications configured to receive and process tokens.
TLS	Transport Layer Security (TLS), and its now-deprecated predecessor, Secure Sockets Layer (SSL), are cryptographic protocols designed to provide communications security over a computer network. Websites use TLS to secure all communications between their servers and web browsers.
TSV	Tab Separated Values is a text file where row data is separated (delimited) with tabs.
URL	A uniform resource locator (URL) points to a resource location on a computer network, for example, a web page on a web server.
Utterance	Words that represent a natural language sentence, for example, "I want to reset my password." A variety of possible utterances a person might say in a conversation are used to train Amelia.
XML	Extensible Markup Language is a markup language and file format used to store, transmit, and reconstruct data. Its structure is both human readable and machine readable.
XSS	Cross-site Scripting (XSS) attacks inject malicious scripts into the web pages of otherwise benign trusted websites. This allows attackers to bypass access controls and other security measures. While XSS initially described using one or more websites to breach another website, XSS also includes other forms of data injection attacks.