



# **Subscription Management System**

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## Introduction

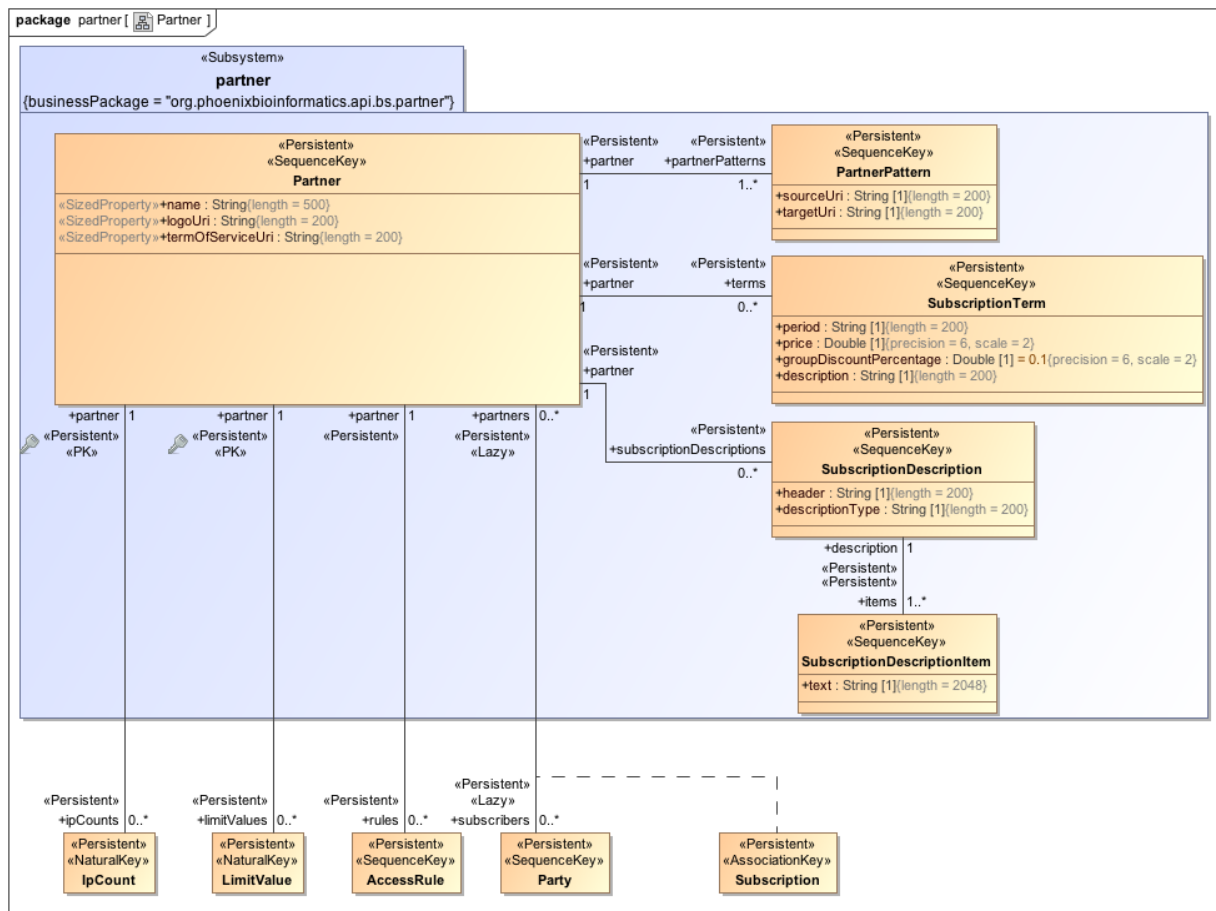
The Phoenix Subscription Management System Application Programming Interface (API) is a RESTful API designed to provide all the services required to support Phoenix subscriptions and partners. Phoenix partners with various entities to provide services paid for by subscription. The API is an interface to the Subscription Management System database documented here. See the API documentation for complete descriptions of the functionality of the API.

The Subscription Management System database contains several subsystems:

- **Partner:** the systems that comprise the Phoenix partnerships for subscription
- **Party:** the people and organizations and their relationships that participate in the system
- **Meter:** the counts and limits that manage metered access to the partner systems
- **Subscription:** the subscription and payment details
- **Authentication:** the user information required to authenticate subscribed or registered users; API keys to authenticate callers of the API
- **Authorization:** the patterns and other information that support decisions to grant access to the partner content
- **Logging:** the operational logs containing page view details

## Partner

A *partner* is a system that comprises a unit for subscription, authentication, and authorization. The user accesses the partner system through a well-defined set of uniform resource identifiers (URIs) identified by a set of regular-expression patterns. Partners have individual subscription terms for display on subscription pages. Partners have subscription descriptions for different subscription contexts, each with multiple lines of text. Partners have subscriptions by parties; see the [Subscription](#) subsystem. Parties have IP counts and limit values; see the [Meter](#) subsystem. Partners also own access rules (combinations of URI patterns and access types); see the [Authorization](#) subsystem.

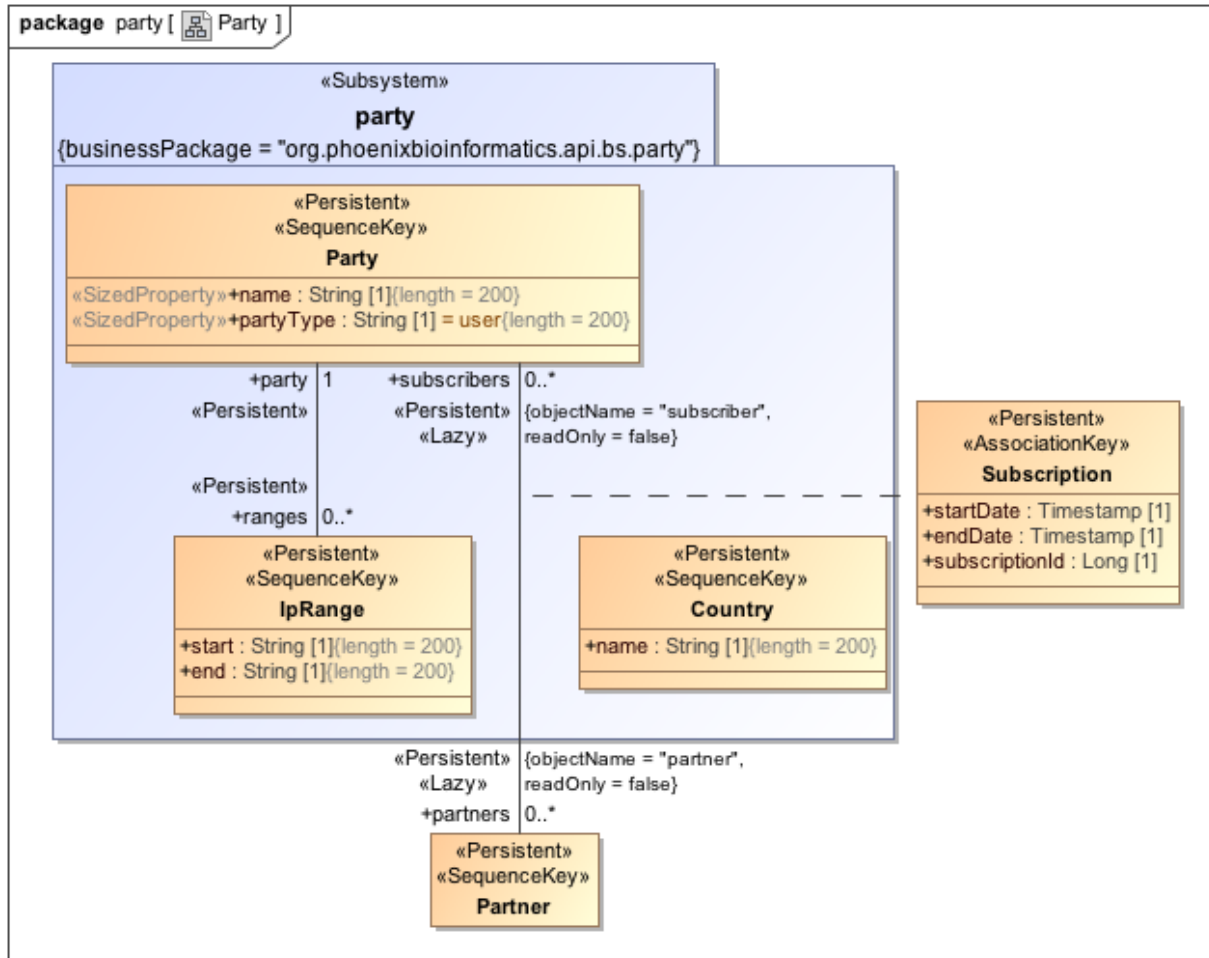


- **Partner:** a system comprising a unit for subscription, authentication, and authorization
  - *partnerId*: unique identifier for the partner (key)
  - *name*: the name of the partner
  - *logoUri*: a URI that returns the partner logo
  - *termOfServiceUri*: a URI that returns the partner terms of service
- **PartnerPattern:** A regular expression pattern that identifies a set of URIs for the partner system; the complete set of patterns for the partner defines the complete set of URIs for the partner system
  - *partnerId*: unique identifier for the partner (key)
  - *pattern*: the regular expression that matches a set of URIs for the partner site (key)

- **SubscriptionTerm:** A standardized period of time and price for subscriptions to a partner's system; used to provide the list of terms for subscribing for individuals
  - *subscriptionTermId*: unique identifier for the term (key)
  - *partnerId*: the partner to which the term applies
  - *period*: the period of time for which a subscription allows access to a partner
  - *price*: the price for a subscription for this term
  - *groupDiscountPercentage*: the discount for this term for a group subscription expressed as a decimal number with 2 significant digits past the decimal point
  - *description*: a text describing the term suitable for display in the user interface, such as "Annual (\$199 USD)" for the 365-day term priced at \$199.
- **SubscriptionDescription:** A collection of descriptive texts that the system displays as a section in a partner's subscription pages
  - *subscriptionDescriptionId*: unique identifier for the description (key)
  - *partnerId*: the unique identifier of the partner that owns this description
  - *header*: required text header for the description section in the user interface
  - *descriptionType*: the required kind of subscription for which to display the text (Default, Individual, Institution, Commercial)
- **SubscriptionDescriptionItem:** An individual descriptive text line within a subscription description
  - *subscriptionDescriptionItemId*: unique identifier for the item (key)
  - *subscriptionDescriptionId*: unique identifier of the description that owns this item
  - *text*: required text of the description line

## Party

A *party* is an entity that is some kind of system participant. A subscription is a many-to-many association between parties and partners; see the [Subscription](#) subsystem.

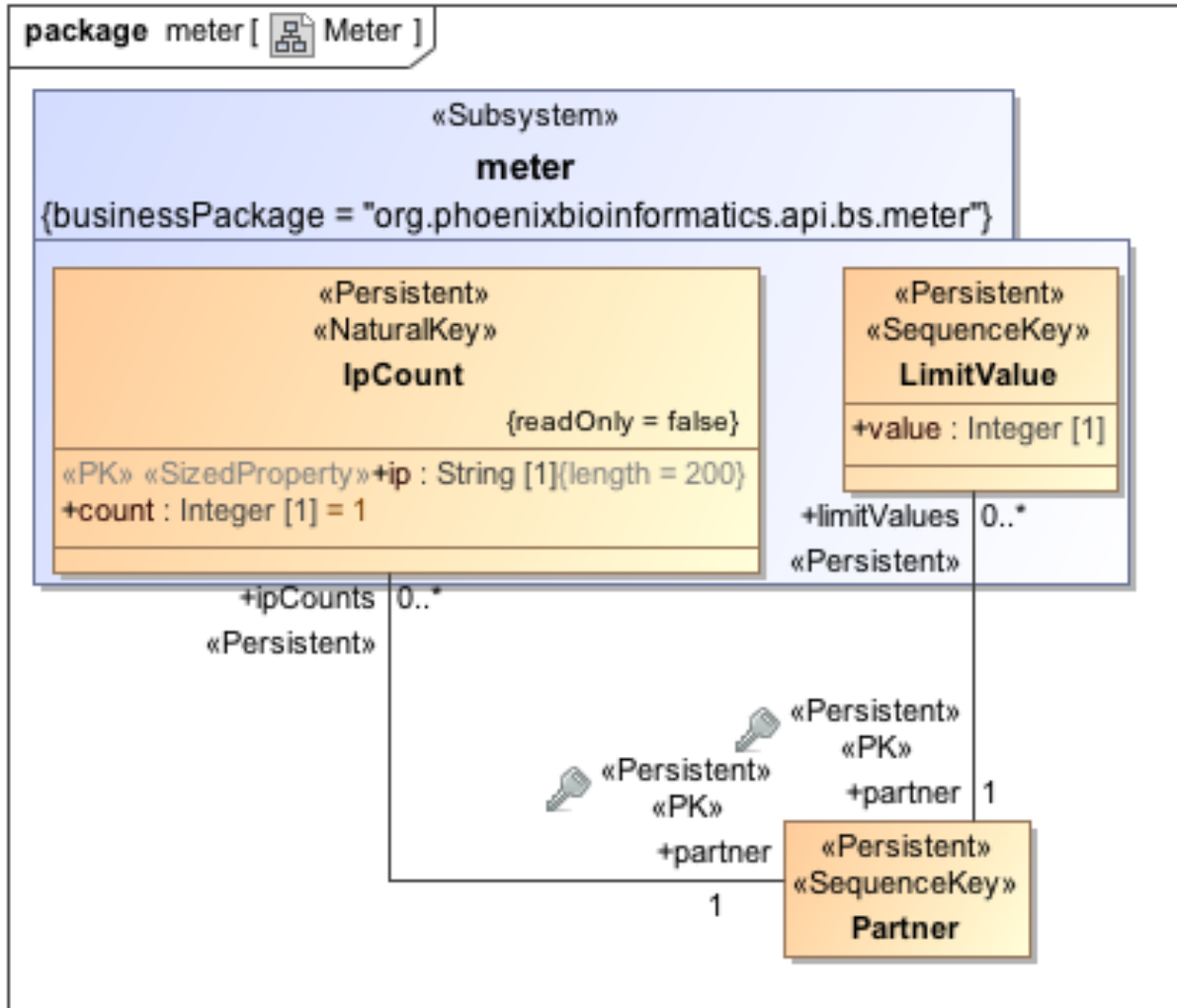


- **Party:** abstract entity that is some kind of system participant
  - *partyId*: unique identifier for the party (key)
  - *name*: name of the party
  - *partyType*: "user"
- **IpRange:** A range of IP addresses for a subscription; ranges must not overlap for a subscription, they must be mutually exclusive
  - *ipRangeId*: unique identifier for the range (key)
  - *partyId*: unique identifier for party that owns the IP range (foreign key)
  - *start*: the IP address that is the first address in the range; must not be part of any other range for the subscription
  - *end*: the IP address that is the last address in the range; must be greater than the start and must be a "reasonable" end to the range (TBD)

- **Country:** A country with a unique name
  - *countryId*: unique identifier for the country (key)
  - *name*: unique name for the country

## Meter

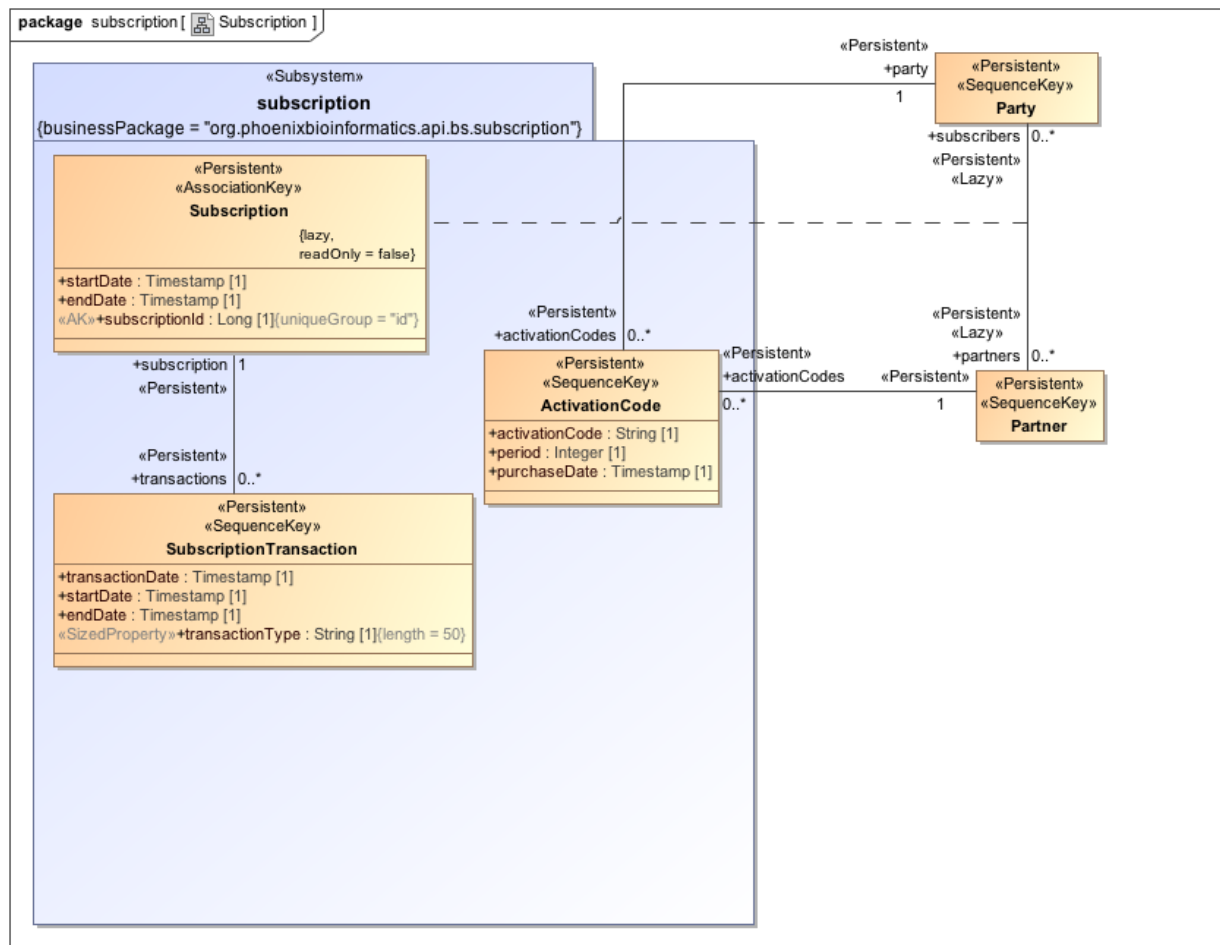
A *meter* is a count of page views. The meter subsystem comprises a set of partner-ip-address counts and a set of limits to enforce on those counts. The user accesses the system, which increments the counts and enforces the limits.



- **IpCount:** the number of accesses by a specific IP address to partner resources
  - *ip*: the IP address (key)
  - *count*: the number of accesses
- **LimitValue:** a limit on the IP address count for a specific partner
  - *limitValueId*: the name of the limit (key)
  - *value*: the number of accesses at which the limit applies

## Subscription

A *subscription* is an agreement by a party to take and pay for access to a partner system. A subscription has a set of transactions (initial subscription, renewal, refund).

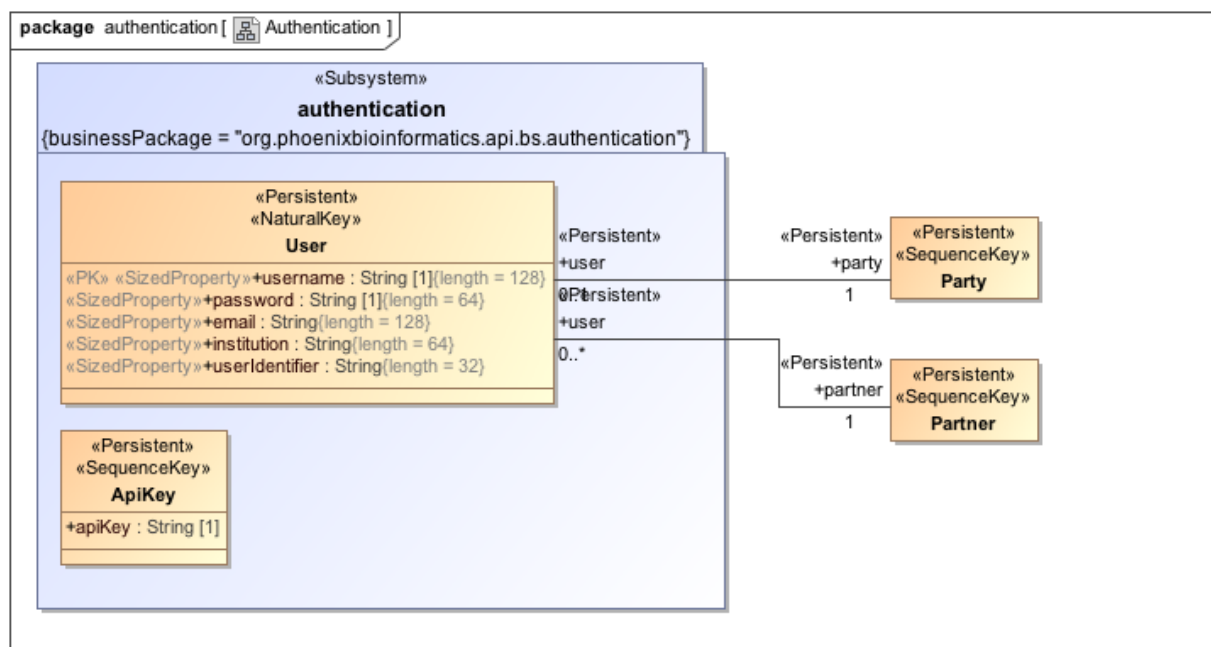


- **Subscription:** An agreement by a party to take and pay for access to a partner system; a relationship between a party and a partner system
  - *subscriptionId*: the unique identifier for the subscription (key)
  - *partyId*: the unique identifier for the subscribing party
  - *partnerId*: the unique identifier for the subscribed partner system
  - *startDate*: the date and time at which the subscription commences
  - *endDate*: the date and time at which the subscription ends

- **SubscriptionTransaction:** A transaction (initial subscription, renewal, subscription refund) for a subscription; this class provides a history of the subscription
  - *subscriptionId*: the unique identifier for the subscription (key)
  - *transactionDate*: the date and time of the transaction
  - *startDate*: as of the transaction date, the date and time of the start of the subscription
  - *endDate*: as of the transaction date, the date and time of the end of the subscription
  - *transactionType*: the kind of transaction (Initial, Renewal, Refund)
- **ActivationCode:** A unique code that allows a subscriber to create or renew a previously purchased subscription to a partner; this approach allows for flexible purchasing options not tied to authentication or subscription services.
  - *subscriptionId*: the unique identifier for the activation code (key)
  - *activationCode*: the code, a Universally Unique Identifier (UUID)
  - *partnerId*: the partner to which the activation code applies
  - *partyId*: the party that activated the subscription, subscribing that party to the partner
  - *period*: the number of months to which to subscribe the party to the partner
  - *purchaseDate*: the date and time at which the code was purchased; potentially used to expire the code if required

## Authentication

*Authentication* is the process of verifying the identity of a user of a partner system. The Subscription Management System uses a username-and-password authentication scheme.

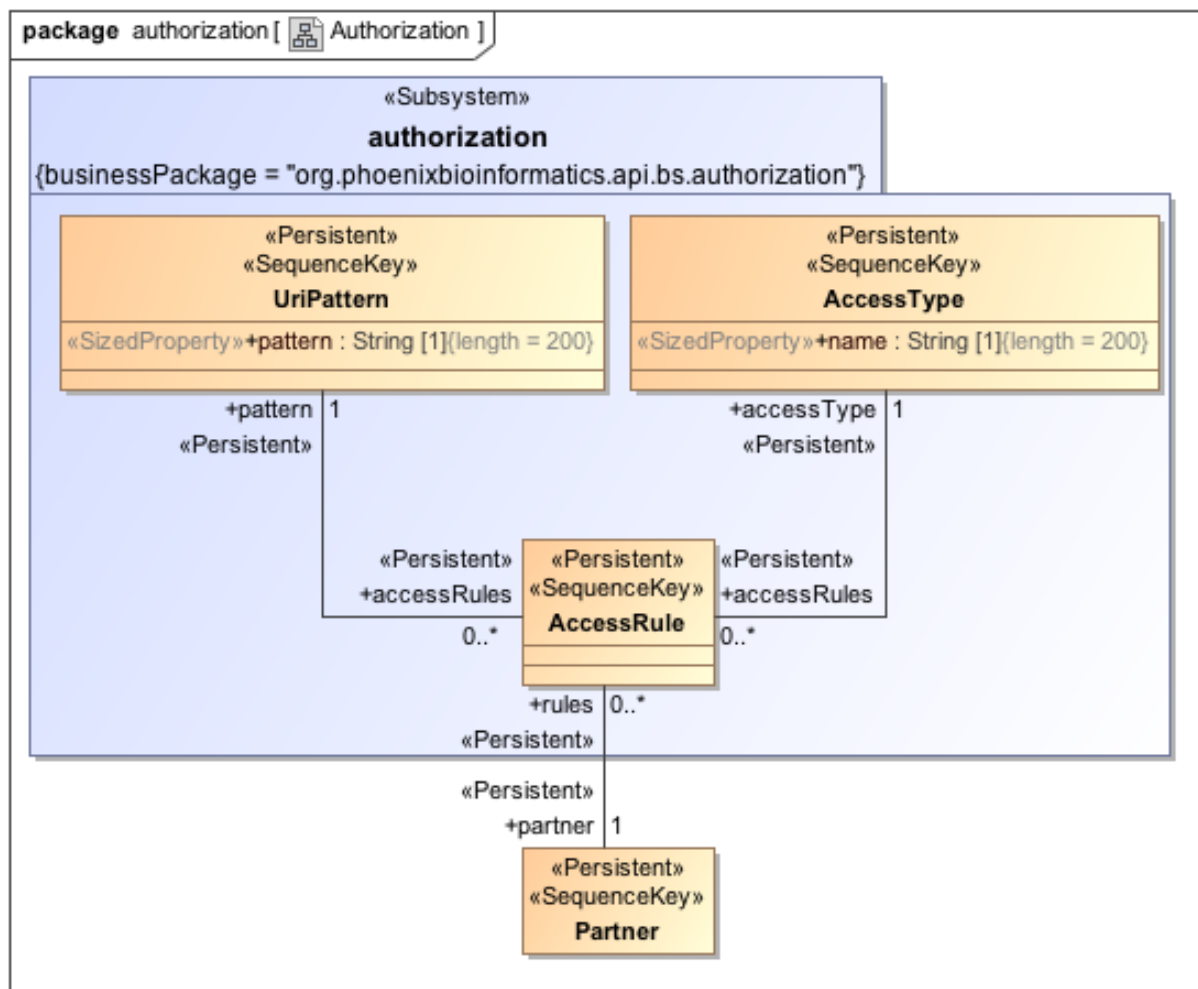




- **User:** the basic information associated with each party that acts as a user of the partner
  - *username*: the unique, case-insensitive username for a party
  - *password*: the password that authenticates the user/party
  - *email*: the party's email address
  - *institution*: the name of the organization to which the party belongs, such as a company or university name
  - *partyId*: the unique identifier for the party that corresponds to the username
  - *partnerId*: the unique identifier for the partner to which the user has registered
- **ApiKey:** the set of key tokens that authenticate callers of the API; supplying one of these API key tokens allows full use of the API
  - *apiKey*: a unique token that permits a caller to use the API

## Authorization

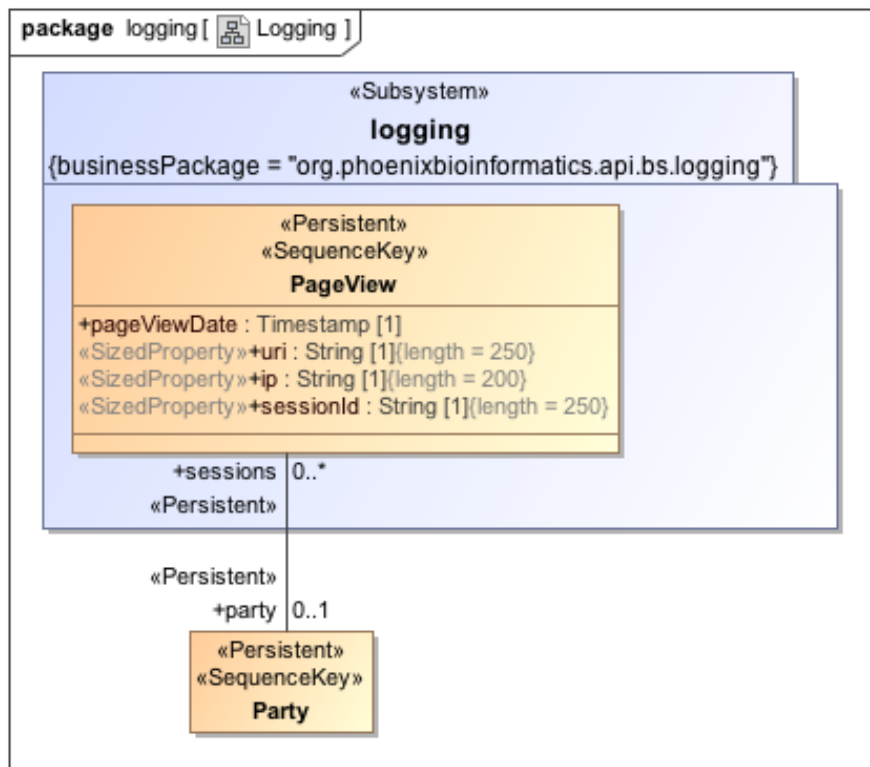
*Authorization* is the process of granting or refusing access to a partner. The Subscription Management System specifies partners as sets of URIs identified by regular expression patterns.



- **UriPattern**: A regular expression pattern that specifies a set of URIs
  - *patternId*: unique identifier for the pattern (key)
  - *pattern*: a regular expression that identifies a set of URIs
- **AccessType**: A particular kind of access to authorize
  - *accessTypeId*: unique identifier for the access type (key)
  - *name*: the name of the access type
- **AccessRule**: A rule that links a set of URIs to a specific access type
  - *accessRuleId*: unique identifier for the access type (key)
  - *patternId*: the set of URIs that trigger the rule
  - *accessTypeId*: the type of access to authorize for the set of URIs
  - *partnerId*: the partner that owns the rule

## Logging

*Logging* is the process of persisting a description of some kind of activity starting at a specific date and time and ending at a specific date and time. The Subscription Management System currently logs page views. A page view is an access of a partner with a URI. A session is a set of possibly empty related page views identified with a session id token as defined by the client processing the page views. Note that a session is not partner-specific.



- **PageView:** a single access through a URI
  - *pageViewId*: the unique identifier for the page view (key)
  - *ip*: the IP address that made the requests in the session
  - *partyId*: the optional party that initiated the page view, if any
  - *sessionId*: the id token of the session containing the page view
  - *pageViewDate*: the date and time of the request
  - *uri*: the full URI of the request, including query string