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METHOD AND SYSTEM FOR DYNAMICALLY ISSUING A PAYMENT ACCOUNT

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TECHNICAL FIELD

[001]   The present disclosure generally relates to the field of a payment card and a payment accounts. More particularly, but not exclusively, the disclosure relates to a method and a system for dynamically issuing a payment card.

BACKGROUND

[002]   Traditionally, issuance of digital credentials, credit cards, or other payment accounts may include manual set up of each individual card. The process may be resource intensive and inefficient.

BRIEF DESCRIPTION OF THE DRAWINGS

[003]   The accompanying drawings, which are incorporated in and constitute a part of this disclosure, illustrate exemplary embodiments and, together with the description, serve to explain the disclosed principles. In the figures, the left-most digit(s) of a reference number identifies the figure in which the reference number first appears. The same numbers are used throughout the figures to reference like features and components. Some embodiments of device or system and/or methods in accordance with embodiments of the present subject matter are now described, by way of example only, and with reference to the accompanying figures, in which:

[004]   **Fig. 1** illustrates an exemplary environment for operating a card system in accordance with some embodiments of the present disclosure;

[005]   **Fig. 2** shows a simplified block diagram of a computing device in accordance with some embodiments of the present disclosure;

[006]   **Fig. 3** shows a simplified block diagram of a platform server in accordance with some embodiments of the present disclosure;

[007]   **Figs. 4a-4c** illustrate a process for creating cardholders, card issuance, and card parameters retrieval using card templates by the card template system in accordance with some embodiments of the present disclosure;

[008]   **Fig. 5** shows a flowchart for a method of using the card template system in accordance with some embodiments of the present disclosure; and

[009]   **Fig. 6** illustrates a block diagram of an exemplary computer system for implementing embodiments consistent with the present disclosure.

[010]   The figures depict embodiments of the disclosure for purposes of illustration only. One skilled in the art will readily recognize from the following description that alternative embodiments of the structures and methods illustrated herein may be employed without departing from the principles of the disclosure described herein.

DESCRIPTION OF THE DISCLOSURE

[011]   In the present document, the word "exemplary" is used herein to mean "serving as an example, instance, or illustration." Any embodiment or implementation of the present subject matter described herein as "exemplary" is not necessarily to be construed as preferred or advantageous over other embodiments. While the disclosure is susceptible to various modifications and alternative forms, specific embodiment thereof has been shown by way of example in the drawings and will be described in detail below. It should be understood, however that it is not intended to limit the disclosure to the particular forms disclosed, but on the contrary, the disclosure is to cover all modifications, equivalents, and alternative falling within the spirit and the scope of the disclosure.

[012]   The terms "comprises", "comprising", or any other variations thereof, are intended to cover a non-exclusive inclusion, such that a setup, device or method that comprises a list of components or steps does not include only those components or steps but may include other components or steps not expressly listed or inherent to such setup or device or method. In other words, one or more elements in a device or system or apparatus proceeded by "comprises… a" does not, without more constraints, preclude the existence of other elements or additional elements in the device or system or apparatus.

[013]   The terms "an embodiment", "embodiment", "embodiments", "the embodiment", "the embodiments", "one or more embodiments", "some embodiments", and "one embodiment" mean "one or more (but not all) embodiments of the invention(s)" unless expressly specified otherwise.

[014] The terms "including", "comprising", "having" and variations thereof mean "including but not limited to", unless expressly specified otherwise.

[015] The present disclosure relates to a method and system for dynamically issuing a payment account. The method for account issuance includes receiving a template request for a card template including one or more card parameters. In response to the request, further, the method may include generating the card template based on the one or more card parameters. Furthermore, the method may include storing the card template under a card template identification. Thereafter, receiving a card request for a new card object including the card template identification. Based on the determination that the card template identification matches the received card template identification, the method may include applying the one or more card parameters to the new card object and instantiating a new card object including the one or more card parameters.

[016] In the following detailed description of the embodiments of the disclosure, reference is made to the accompanying drawings that form a part hereof, and in which are shown by way of illustration specific embodiments in which the disclosure may be practiced. These embodiments are described in sufficient detail to enable those skilled in the art to practice the disclosure, and it is to be understood that other embodiments may be utilized and that changes may be made without departing from the scope of the present disclosure. The following description is, therefore, not to be taken in a limiting sense.

[017] **Fig. 1** illustrates an exemplary environment for operating a card system in accordance with some embodiments of the present disclosure.

[018] The system 50 may include any number of computing devices 55, such as smart phones or tablet computers, mobile computing devices, wearable mobile devices, desktop computers, laptop computers, or any other computing devices that allow users to interface with a digital communication network 60. The computing devices 55 may be connected to the digital communication network 60 via at least one of a wired interface or a wireless interface, and via the internet or a cellular network or any other suitable connection service such as local area networks, Bluetooth and the like. In one embodiment, at least one of a client server 70, a platform server 85, one or more issuer servers 65 and a token server 80 may be connected to the computing devices 55 via the digital communication network 60. The client server 70 may

be connected to one or more point-of-sale (POS) devices 69, such as in a merchant store either directly or via the digital communication network 60. The platform server 85 may represent, for example, a credit card issuer, a bank, or a financial institution. In one embodiment, at least one of the client server 70, the platform server 85, the one or more issuer servers 65 and the token server 80 may be connected through a secure payment network 75. The payment network 75 may be an electronic payment system used to accept, transmit, or process transactions made by users with payment cards for at least one of money, goods, and services. Further, the payment network 75 may transfer information and funds among payment card issuers, merchants, payment card holders, payment processors, acquirers, and the like. Further, other entities, such as an acquirer, may be connected to the payment network 75. Furthermore, the platform server 85 may be connected to the one or more user devices 55 over the digital communication network 60.

[019]   In one embodiment, the computing device 55 may be a device that operates using a portable power source, such as a battery. The computing device 55 may also have a display 56 which may or may not be a touch sensitive display. More specifically, the display 56 may have a capacitance sensor, for example, that may be used to provide input data to the computing device 55. In other embodiments, an input pad 57 such as arrows, scroll wheels, keyboards, and the like., may be used to provide inputs to the computing device 55. In addition, the computing device 55 may have a microphone 58 which may accept and store verbal data, a camera 59 to accept images and a speaker 61 to communicate sounds.

[020]   **Fig. 2** shows a simplified block diagram of the computing device 55 in accordance with some embodiments of the present disclosure.

[021]   The portable computing device 55 may have a processor 1400 that is physically configured according to computer executable instructions. In some embodiments, the processor 1400 can be specially designed or configured to optimize communication between the server 85 and the computing device 55 relating to account issuance with a template request for a card. The computing device 55 may include a portable power supply 1455 such as a battery, which may be rechargeable. Further, the computing device 55 may include a sound and a video module 1461 for displaying video and outputting the sound. The sound and a video module 1461 may be turned off when not in use to conserve power and battery life. Furthermore, the computing device 55 may include a volatile memory 1465 and a non-volatile memory 1471. Thereafter, the computing device 55 may have (Global Positioning System) GPS capabilities

as a separate circuit or included to be a part of the processor 1400. The computing device 55 may include an input/output bus 1475 used to shuttle data to and from the various user input/output devices such as a microphone, a camera 59, a display 56, or other input/output devices. The portable computing device 55 may control communicating with the networks, such as communication network 60 as shown in Fig. 1, either through wireless or wired devices.

[022]   **Fig. 3** shows a simplified block diagram of the platform server 85 in accordance with some embodiments of the present disclosure.

[023]   In some embodiments, the platform server 85 may include a digital storage such as a magnetic disk, an optical disk, flash storage, non-volatile storage, and the like. Structured data may be stored in the digital storage such as in a database. More specifically, the platform server 85 may have a processor 1500 that is physically configured according to computer executable instructions. In some embodiments, the processor 1500 can be specially designed or configured to optimize communication between a portable computing device 55, and the platform server 85 relating to the account issuance with a template request for a card as described herein. The platform server 85 may include a sound and video module 1505 for displaying video and outputting the sound. The sound and video module 1505 may be turned off when not in use to conserve power and battery life. The platform server 85 may also have volatile memory 1510 and non-volatile memory 1515.

[024]   Further, a database 1525 for digitally storing structured data may be stored in the memory 1510 or 1515 or may be separate as shown in Fig.3. The database 1525 may also be part of a cloud of servers and may be stored in a distributed manner across a plurality of servers. The platform server 85 may include an input/output bus 1520 for shuttling data to and from the various user input devices such as a microphone, a camera, a display monitor, or screen, and the like. The input/output bus 1520 may control communicating with networks, such as a communication network and a payment network, either through wireless or wired devices.

[025]   In some embodiments, a card template controller for running a card template service or API may be located on the computing device 55. However, in other embodiments, the card template controller may be located on a server 85, or both the computing device 55 and the server 85.

[026]   **Figs 4a-c** shows flow diagrams illustrating embodiments of using the card template

system that includes an embodiment of a process for creating cardholders, card issuance, and card parameters retrieval using card templates in accordance with some embodiments of the present disclosure.

[027]   In some embodiments, the cardholder and card template objects described above may be used as illustrated for card issuance. In some embodiments, the API platform may create digital credentials using a preconfigured bank identification number (BIN). In some embodiments, issued cards may be automatically enrolled into downstream systems for card controls and alerts, which may alleviate the need to re-enroll those cards for these additional downstream systems. In some embodiments, card controls may be defined at the Card level, and/or at the Card Template. In some embodiments, card alerts may be set at the card level.

[028]   In some embodiments, card templates may aid in repetitive instant issuance of digital credentials. A card template may act as an abstract entity that contains high-level common parameters for card objects. In some embodiments, the high-level common parameters may include default values for selecting card attributes such as default expiry date, limit of number of cards, default card controls, and the like. The card attributes are discussed in more details in sections below, and those skilled in the art will appreciate that attributes other than those described herein may be used as well.

[029]   One practical application of the card template system described herein may be, for example, in commercial cards scenarios where a card administrator may want to set one or more consistent base parameters for certain number of cards to be issued. In some embodiments, the card administrator may also want to add one or more restrictions of the card's usage. Traditionally, such a setup could be conducted manually at a card program. The card template system described herein may allow for a lightweight abstraction configurable via APIs, for example, for wallet providers, neo-banks, and the like. Using the card template system, subsequent issuing calls for cards may be made more succinctly.

[030]   In some embodiments, a card template may include the following inheritable parameters of Table 1 to be applied to each card created using the card template. Having one or more parameters at the card template level may alleviate the need to pass a majority of them at the card creation / issuance APIs.

Field	Type	Description
card_controls	**CardControls []** Collection of CardControls	Associating default card controls with a card template provide these controls to be trickled down to each card issued with this template. This may be helpful in issuing commercial cards scenarios
tokenization	**Enum** Possible values: APPLE_PAY GOOGLE_PAY <custom_wallet_pay>	Represents the default tokenization schemes that may be supported on issuable cards. Supplying a default value at this stage may enable automated push provisioning into consumer's device upon card issuance.
card_program_id	**GUID**	Card program ID sets up default rewards program and rewards program identifier (RPIN) at the card template level that may be used for all issued cards
address	**Address**	Default Address to be used for physical fulfilment and address verification service (AVS) checks.
type	**Enum** Possible values: VIRTUAL (default) PHYSICAL	Type of card being requested.

Field	Type	Description
customization	**Customization** Card customization object including text to be displayed and styling.	Customization for cards (physical). Could include default expiry date and other customized features.
funding_source	**FundingSource** Pre-created funding source using onboarding process	The funding source specification at the template level ensures default source associated with the card object when adding funds to associated cards using Transactions
art	**String** Default URL of the card art image.	Cards' card art image. Could be integrated with a metadata manager, such as Visa Card Metadata Manager (VCMM)
personalized_message	**String** Line below display name.	Default message like an enterprise name to be added below the cardholder name
metadata	**JSON** Valid and well-formed JavaScript Object Notation (JSON). May include validations performed to negate any profane or illegal content.	A metadata field may allow API caller to maintain request-wide state for their brief content. As-is data is returned back with the response. In some embodiments, the metadata values may not be processed.
status	**Boolean** Activate the card by default or not	Applies to virtual cards
number_limit	**Int**	Default number of cards that

Field	Type	Description
		may be created using this template

Table 1

[031]   It should be understood by those skilled in the art that the items listed under the Field and Type columns in Table 1 are examples and other suitable terms, file types, or formats may be used in other embodiments.

[032]   In some embodiments, a client, such as an administrator of a card program, digital wallet, a merchant, gift card provider, and the like, may decide to offer customers or employees a physical or digital credit card with particular attributes or parameters. For example, a trucking company may want to issue credit cards to its drivers that may be used for purchasing business-related items such as fuel, supplies, and the like. The trucking company may want to fund the cards through a common funding source, set common purchasing restrictions or limits for each card issued, add a company logo to the cards, and the like. The trucking company may, through an API included in the card template system, select the values for these parameters to set up a card template for the particular card group to be initiated. Once the card template is set up, the card objects may be instantiated with the parameters pre-selected in the card template by the trucking company subsequently for the issued cards through that card group. In some embodiments, the card template may include a parameter to register the instantiated digital card to a digital wallet. For example, the credit card issuers may use the card template system to roll out a particular type of card option with particular rewards features.

[033]   In some embodiments, the card template system may enable issuance of stored-value cards either digitally or physically or both. For example, a card template may specify a funding source for a stored-value card, and the card may be funded immediately upon issuance. In some embodiments, the card template may specify that the stored value card may be usable via the digital wallet based applications and linked to a device of a user that is configured to make digital payments.

[034]   In some embodiments, the card template system, by reducing the number of steps and communications needed on the issuance of any particular card object, may aid in reducing the

overall bandwidth used to transmit data related to instantiating new cards. Traditionally, for each card object to be issued, each parameter may include multiple actions in order to include the parameter on the card. For example, in instantiating a card object, the card provider or other platform may request and receive data transmissions related to many combinations of parameters available for the card object. In some embodiments, the data transmissions may amount to, for example, ten million actions, each of which use bandwidth. Using the card template system, many of those parameters may have been pre-selected and present in an abstract card entity. Thus, the data transmissions may be reduced as not requiring transmission for the pre-selected parameters. In some embodiments, the card template system may be reduced, for example, about 1 million actions.

[035] The card template system may also provide a technical solution to a technical problem of receiving confirmation or permissions from a plurality of different entities or from a plurality of separate departments or sub-entities within a provider or business entity. For example, within a client or issuer processor, a division that manages loyalty or rewards programs for cards may be different than a division that provides tokenization services or a division that manages card funding sources, or any of a number of other services. In such embodiments, instantiating each card object may include communications with each of the divisions individually, which may be resource or time intensive. A card template may conduct each of those interactions with separate divisions ahead of time and link the resulting abstract card entity to a single CardID. As a result, new card objects to be instantiated under the stored CardID may include the template parameters without needing to coordinate with each division again. Other technical advantages may be provided, such as performing normalization of inputs, validation processes, Non-Functional Requirements (NFR) normalization, data stream normalization, and the like, at the time of the card template's creation, thus obviating the need for these processes to be completed upon card object instantiation. The card template system provides efficiencies that increase processing speed and reduce use of computing resources, particularly when large numbers of card objects are instantiated using a card template.

[036] In some embodiments, an API in the card template system may allow for a client to select from a particular group of often-used services or parameters, but might not include options for the selection of each and every parameter variable that may be selected downstream after card instantiation. In some embodiments, the card template system may implement machine learning or other data analysis to provide additional or differing service options based

on the client or the type of client. For example, a particular client may initiate a card template using a first set of parameters available, but additionally add other parameters later to each card object in that group that may or may not have been available for selection in a template. In some embodiments, the card template system may automatically recognize that a client is interested in the added other parameters and include the other parameters as options in the subsequent card templates.

[037]   In some embodiments, the card template system may additionally include providing custom card templates to clients based on prior behaviors from the client, or based on prior selections and parameters selected by other similarly situated clients (e.g., other clothing merchants, other digital wallets, other banks or issuers, and the like). For example, the card template system may notice that many issuer clients of a certain size range or geographic location select particular parameters to use in the cards. In response, the card template system may automatically include those particular services, parameters, or combination of parameters as options for similarly situated clients.

[038]   Card Controls

[039]   In some embodiments, one feature of the card template system may be card controls. Traditionally, parameters such as spend controls and merchant controls may be specified after card creation and may be controlled by the consumer associated with the card. In another embodiments, card administrators, such as a developer of a large electronic wallet provider, may restrict the usage of instantly issued cards against wallet users' store value credit. In such embodiments, such restrictions may be based on amount, merchant category, location, and the like. Those skilled in the art will recognize that other restrictions may be implemented as well.

[040]   In some embodiments, although card controls may specify at a card template level, no actual control objects may be created until a particular card is issued. In such embodiments, the card template abstract entity persists in Visa systems and, after issuance of card or account credentials, the card control metadata may be used to create actual controls corresponding to a new card using the template. The abstract card template may then remain and be used to create additional cards, digital payment accounts, and the like, using the same card template parameters instead of starting over from scratch for each new card or account.

[041]   Tokenization (Automated Token Provisioning)

[042]   In some embodiments, when creating a card template, a developer may provide details on, for example, default tokenization targets for newly issued cards. In some embodiments, providing a card template and cardholder references may enable the developer to instantly issue a card. In some embodiments, a cardholder may be mandatory for an issuance call. When creating a cardholder, a cardholder's device ID for one or more computing devices may be provisioned in Visa's system. In some embodiments, the following steps may take place post-issuance, although not necessarily in this order:

(1) Card template data may be used to retrieve default wallet targets;

(2) An encrypted payload for card data may be created;

(3) The card or account may be enrolled in a CardID Service and a card ID may be generated;

(4) The cardholder's device may be sent a push notification with the card ID;

(5) The cardholder's device may make a call to a provisioning service to retrieve encrypted card payload, for example, the encrypted card payload created above at step (2);

(6) The cardholder's device may invoke a native wallet to initiate a tokenization process;

(7) The encrypted payload is sent to a tokenization service, such as Visa Token Service (VTS), for linking, provisioning, and enrolling a token into the device wallet.

[043]   The person skilled in the art will understand that variations on the steps above, or variations of the order in which the steps above are carried out, may still achieve the desired result. Additionally, in some embodiments, additional or fewer steps may be taken throughout the tokenization process depending on the particular application or context.

[044]   Reusability

[045]   Some parameters in the card template may be descriptive, such as card material, card color, whether the card lists the account number or not, whether the card includes a magnetic strip, and the like. In some embodiments, default values may be provided for application at the card issuance step. Some default variables may be included in the card program (e.g., loyalty program, miles program, gift card program, and the like.), funding source, card personalization, and the like. In some embodiments, parameters in the card template may provide limits for the

number of instances, and the like. In some embodiments, the parameters set for the card template may be reused for an unlimited or predetermined limit of times to create any number of additional cards or accounts with the prescribed card template parameters.

[046]   Application Programming Interface (API)

[047]   In some embodiments, a card template API platform may be used to efficiently and quickly issue new credit cards either physically, digitally, or both. The API platform may connect clients with issuing processors and supports a range of program type and localized specializations. The API platform may also provide direct connection to tokenization services (e.g., VTS), and developer platforms, (e.g., Visa Developer Platform). The API platform may include support for digital wallets and Universal Pay Buttons, may allow programmatic dispute handling, and may provide real-time authorization hooks. Credit cards or accounts created using the API platform may be substantially immediately available for provisioning to digital wallets, Visa Remote Commerce, and the like. The API platform may also provide access to advanced card controls, such as those described above with reference to card templates.

[048]   In some embodiments, the API platform may allow users to create and manage virtual and physical cards, manage card controls (e.g., spend restrictions), and may allow users to subscribe to various entity state changes via webhooks. In some embodiments, the API platform may work around some base entities, which may include a Cardholder, Card, Card Template, Authorization, Transaction, and Subscription objects. The API platform may provide various methods to manage lifecycle of these entities or objects.

[049]   In some embodiments, a Card Template may allow creating a base object to provide default settings to issuable cards. The card template may include, among other things, setting default expiry date, default address, and default set of card controls and other attributes. Using a card template, the subsequent issuing calls can be made succinct.

[050]   A Cardholder may be the consumer for whom a card may be issued. There may be multiple cards issued for a cardholder. In some embodiments, digital wallet clients (e.g., Apple Pay) may associate one cardholder with each of their own consumers. A cardholder object may contain demographic information about the consumer, such as address, phone, email and the like.

[051]   A Card may represent the 16-digit PAN number and additional attributes. In some

embodiments, a cardholder object may be required for creating a card and providing a card template may reduce the need to specify several attributes. The Card object may also include expiry date, CVV2 and the like. Operations such as funding the card, managing its lifecycle and the like may be available on the card.

[052]   A Transaction object is may be a multi-purpose entity that may represents all types of transactions made on a card object. The Transaction object may include funding transactions, authorizations made while using the card, or when a refund is applied to the card.

[053]   A Subscription object may be created to listen to various objects' state changes in a host system. By creating a Subscription, the developer may provide their webhook URL that may be called when a certain event takes place. This may allow a real-time access to entity states without explicitly polling for statuses.

[054]   Each of Figs. 4a, 4b, and 4c illustrate swim lane type diagrams depicting portions of a workflow for embodiments of digital wallet-initiated issuance and card details retrieval as used in the card template system described herein. Several entities may be involved in the processes, such as a client (e.g., a digital wallet, neo bank, and the like.), issuer and consumer services (ICS) platform, issuer processor, and issuer bank. In some embodiments, the ICS platform may include the card template system. In some embodiments, the ICS platform may be hosted on a server, such as a platform server. Those of skill in the art will understand that some or all of these roles may be played by one or more entities in differing embodiments. Referring to Fig. 4a, an embodiment of a method 100 of creating a cardholder in the card template system is shown. At 110, the client 102 may begin the cardholder creation process. At 112, the client 102 may ingest cardholder parameters and perform "know your customer" (KYC) procedures and transmit the results to the ICS platform 104. The client may operate via a server, such as a client server, or another computing device. At 114, the ICS platform may verify the cardholder address and, at 116, and create the cardholder and transmit the cardholder information to an issuer processor 106. The issuer processor 106 may record the cardholder information at, for example, an issuer server, and transmit the confirmation back to the ICS platform. At 120, the ICS platform 104 may enroll or link with the platform server run by a provider of the ICS platform and card template system. The ICS platform 104 may, transmit the enrollment confirmation and any other relevant cardholder information to the client 102 at the client server. At 122, the client 102 may retrieve cardholder identification information for the client systems to complete the cardholder creation process 100.

[055]   In some embodiments, some additional administrative tasks 130 may take place between the ICS platform 104, the issuer processor 106, and the issuer bank 108. At 124, the issuer processor 106 may conduct provider onboarding, such as BIN setup, registration, URL whitelisting, sandbox integration, and the like. The issuer processor 106 may transmit the onboarding information to the issuer bank 108 to, at 128, provide BIN and set-up account of record. The issuer processor 106 may also transmit the onboarding information to the ICS platform 104 for, at 126, registering provider endpoints.

[056]   Referring to Fig. 4b, an embodiment of a method 200 of creating a card issuance in the card template system is shown. At 202, the client may begin the card creation or card issuance process via, for example, an API for accessing the ICS platform 104. In response, at 204, the ICS platform 104 may validate the cardholder 204 (e.g., see Fig. 4a), and, at 206, apply card template parameters to the card being issued. In some embodiments, the card template parameters may have been previously selected and otherwise set up by a client, such as via an API as described herein. In some embodiments, the card template parameters may reflect at least those shown in Table 1 but may include more or fewer parameters as well. The ICS platform 104 may transmit the validated cardholder information and card template parameters to the issuer processor 106. At 208, the issuer processor 106 may create an underlying account for the card being issued and transmit the account information to the issuer bank 108. At 210, the issuer bank may record the account with the issuer and transmit a confirmation or other account information back to the issuer processor 106. At 212, in some embodiments, the issuer processor 106 may generate a prepaid, reloadable card, or generate another type of card based on, among other things, the card template parameters selected. In some embodiments, the card created may not be prepaid, or may of other selected features that those skilled in the art will appreciate. The issuer processor 106 may transmit the generated card information to the issuer bank 108 and, at 214, the issuer bank may update its ledgers for the recorded account to include information on the card or cards generated. The issuer processor 106 may also transmit the generated card information to the ICS platform, which may, at 216, enroll the generated card in a CardID service, for example, to enable interoperability with other services, where applicable. At 218, the ICS platform may determine whether card controls have been selected at the card template level. If yes, the ICS platform 104 may, at 222, apply card controls to the generated card as provided for in the applicable card template. If card controls have not been provided at the card template level, or after the card template parameters have been applied, the ICS platform 104 may transmit the card details to the client 102 that initiated the card

creation process. At 220, the client 102 may retrieve the card details. In some embodiments, the card details may be retrieved with an obfuscated permanent account number (PAN) and card verification value (CVV or CVV2). The universal CardID number may also be retrieved.

[057]   Referring to Fig. 4c, an embodiment of a method 300 of retrieving card information in the card template system is shown. At 302, the client 102 may begin the process of retrieving card information by transmitting the requested card information to the ICS platform 104. At 304, the ICS platform 104 may validate the CardID and retrieve underling Account ID. At 306, the ICS platform 104 may translate the CardID to a processor CardID, for example, by matching the CardID to a processor CardID in a CardID database. The ICS platform 104 may transmit the processor CardID and account ID to the issuer processor 106 which, may request account balances associated with the account ID from the issuer bank 108. In response, at 310, the issuer bank 108 may transmit the record of account balances for the provided Account ID to the to the issuer processor 106. At 308, the issuer processor 106 may merge card details and balance details for the provided account ID and transmit that information to the ICS platform 104. At 312, the ICS platform 104 may convert the CardID and customer IDs to universal IDs and transmit such card details to the client 102. The client 102 may then, at 314, retrieve the card details sensitive data, and the like.

[058]   **Fig. 5** illustrates an embodiment of a method 500 of using the card template system in accordance with some embodiments of the present disclosure.

[059]   At 502, the method may include receiving a request for a card template including one or more card parameters. At 504, the method may include generating a card template based one or more card parameters. In some embodiments, the card template may be an abstract entity including the one or more card parameters as high-level card attributes. In some embodiments, the card template may be stored under a card template identification. At 506, the method may include receiving new card object activation instructions via a card request for a new card object including the card template identification. At 508, if the card template identification does not match the card request, the method may be terminated or cycle back to 506. If the card template identification matches that of the card template, at 510, the method may include applying the one or more template parameters to the new card object. At 512, the method may include instantiating a new card object including the one or more parameters.

[060]   **Fig. 6** illustrates a block diagram of an exemplary computer system for implementing

embodiments consistent with the present disclosure.

[061]   In an embodiment, the computer system 602 may be a platform server 85, which is used for dynamically issuing the card template. The computer system 602 may include a central processing unit ("CPU" or "processor") 604. The processor 604 may comprise at least one data processor for executing program components for executing user or system-generated business processes. The processor 604 may include specialized processing units such as integrated system (bus) controllers, memory management control units, floating point units, graphics processing units, digital signal processing units, and the like.

[062]   The processor 604 may be disposed in communication with one or more input/output (I/O) devices (606 and 608) via I/O interface 610. The I/O interface 610 may employ communication protocols/methods such as, without limitation, audio, analog, digital, stereo, IEEE-1394, serial bus, Universal Serial Bus (USB), infrared, PS/2, BNC, coaxial, component, composite, Digital Visual Interface (DVI), high-definition multimedia interface (HDMI), Radio Frequency (RF) antennas, S-Video, Video Graphics Array (VGA), IEEE 802.n /b/g/n/x, Bluetooth, cellular (e.g., Code-Division Multiple Access (CDMA), High-Speed Packet Access (HSPA+), Global System For Mobile Communications (GSM), Long-Term Evolution (LTE) or the like), and the like.

[063]   Using the I/O interface 610, the computer system 602 may communicate with one or more I/O devices (606 and 608). In some implementations, the processor 604 may be disposed in communication with a communication network 612 via a network interface 614. The network interface 614 may employ connection protocols including, without limitation, direct connect, Ethernet (e.g., twisted pair 10/100/1000 Base T), Transmission Control Protocol/Internet Protocol (TCP/IP), token ring, IEEE 802.11a/b/g/n/x, and the like. Using the network interface 614 and the communication network 612, the computer system 602 may be connected to the computing device 55.

[064]   The communication network 612 can be implemented as one of the several types of networks, such as intranet or any such wireless network interfaces. The communication network 612 may either be a dedicated network or a shared network, which represents an association of several types of networks that use a variety of protocols, for example, Hypertext

Transfer Protocol (HTTP), Transmission Control Protocol/Internet Protocol (TCP/IP), Wireless Application Protocol (WAP), and the like., to communicate with each other. Further, the communication network 612 may include a variety of network devices, including routers, bridges, servers, computing devices, storage devices, and the like.

[065]   In some embodiments, the processor 604 may be disposed in communication with a memory 616 e.g., RAM 618, and ROM 620, and the like. as shown in Figure 6, via a storage interface 622. The storage interface 622 may connect to memory 616 including, without limitation, memory drives, removable disc drives, and the like., employing connection protocols such as Serial Advanced Technology Attachment (SATA), Integrated Drive Electronics (IDE), IEEE-1394, Universal Serial Bus (USB), fiber channel, Small Computer Systems Interface (SCSI), and the like. The memory drives may further include a drum, magnetic disc drive, magneto-optical drive, optical drive, Redundant Array of Independent Discs (RAID), solid-state memory devices, solid-state drives, and the like.

[066]   The memory 616 may store a collection of program or database components, including, without limitation, user/application 624, an operating system 626, a web browser 628, a mail client 630, a mail server 632, a user interface 634, and the like. In some embodiments, computer system 602 may store user/application data 624, such as the data, variables, records, and the like. as described in this invention. Such databases may be implemented as fault-tolerant, relational, scalable, secure databases such as Oracle or Sybase.

[067]   The operating system 626 may facilitate resource management and operation of the computer system 602. Examples of operating systems include, without limitation, Apple Macintosh ^{TM} OS X ^{TM,} UNIX ^{TM}, Unix-like system distributions (e.g., Berkeley Software Distribution (BSD), FreeBSD ^{TM}, Net BSD ^{TM}, Open BSD ^{TM}, and the like.), Linux distributions (e.g., Red Hat , Ubuntu , K-Ubuntu , and the like.), International Business Machines (IBM ^{TM}) OS/2 ^{TM}, Microsoft Windows ^{TM} (XP ^{TM}, Vista/7/8, and the like.), Apple iOS ^{TM}, Google Android ^{TM}, Blackberry ^{TM} Operating System (OS), or the like. A user interface may facilitate display, execution, interaction, manipulation, or operation of program components through textual or graphical facilities. For example, user interfaces may provide computer interaction interface elements on a display system operatively connected to the computer system 602, such as cursors, icons, check boxes, menus, windows, widgets, and the

like. Graphical User Interfaces (GUIs) may be employed, including, without limitation, Apple ™ Macintosh ™ operating systems' Aqua ™, IBM ™ OS/2 ™, Microsoft ™ Windows ™ (e.g., Aero, Metro, and the like.), Unix X-Windows ™, web interface libraries (e.g., ActiveX, Java, JavaScript, AJAX, HTML, Adobe Flash, and the like.), or the like.

[068]   The illustrated steps are set out to explain the exemplary embodiments shown, and it should be anticipated that ongoing technological development will change the manner in which particular functions are performed. These examples are presented herein for purposes of illustration, and not limitation. Further, the boundaries of the functional building blocks have been arbitrarily defined herein for the convenience of the description. Alternative boundaries can be defined so long as the specified functions and relationships thereof are appropriately performed. Alternatives (including equivalents, extensions, variations, deviations, and the like., of those described herein) will be apparent to persons skilled in the relevant art(s) based on the teachings contained herein. Such alternatives fall within the scope and spirit of the disclosed embodiments. Also, the words "comprising," "having," "containing," and "including," and other similar forms are intended to be equivalent in meaning and be open ended in that an item or items following any one of these words is not meant to be an exhaustive listing of such item or items, or meant to be limited to only the listed item or items. It must also be noted that as used herein and in the appended claims, the singular forms "a," "an," and "the" include plural references unless the context clearly dictates otherwise.

[069]   Furthermore, one or more computer-readable storage media may be utilized in implementing embodiments consistent with the present disclosure. A computer-readable storage medium refers to any type of physical memory on which information or data readable by a processor may be stored. Thus, a computer-readable storage medium may store instructions for execution by one or more processors, including instructions for causing the processor(s) to perform steps or stages consistent with the embodiments described herein. The term "computer readable medium" should be understood to include tangible items and exclude carrier waves and transient signals, i.e., are non-transitory. Examples include random access memory (RAM), read-only memory (ROM), volatile memory, nonvolatile memory, hard drives, CD ROMs, DVDs, flash drives, disks, and any other known physical storage media.

[070]   Finally, the language used in the specification has been principally selected for

readability and instructional purposes, and it may not have been selected to delineate or circumscribe the inventive subject matter. Accordingly, the disclosure of the embodiments of the disclosure is intended to be illustrative, but not limiting, of the scope of the disclosure.

[071]   With respect to the use of substantially any plural and/or singular terms herein, those having skill in the art can translate from the plural to the singular and/or from the singular to the plural as is appropriate to the context and/or application. The various singular/plural permutations may be expressly set forth herein for sake of clarity.

METHOD AND SYSTEM FOR DYNAMICALLY ISSUING A PAYMENT ACCOUNT

ABSTRACT

The present disclosure relates to a method and system for dynamically issuing a payment account. The method for account issuance includes receiving a template request for a card template including one or more card parameters. In response to the request, further, the method may include generating the card template based on the one or more card parameters. Furthermore, the method may include storing the card template under a card template identification. Thereafter, receiving a card request for a new card object including the card template identification. Based on the determination that the card template identification matches the received card template identification, the method may include applying the one or more card parameters to the new card object and instantiating a new card object including the one or more card parameters.
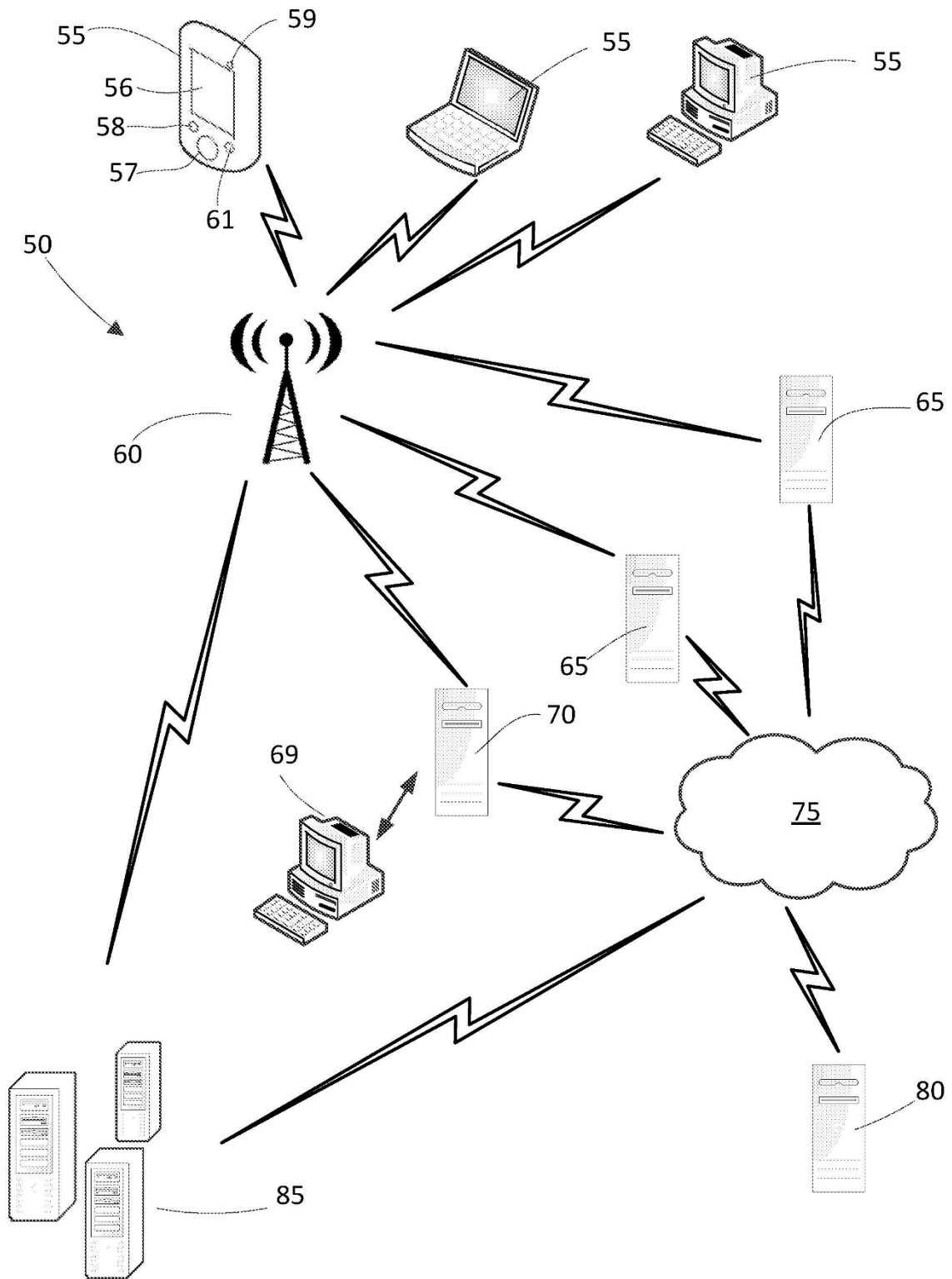
1/7

FIG.1

55

1400 → 1471 → 1475
1400 → 1465 → 1475
1400 → 1461 → 1475
1400 → 1455 → 1475

FIG.2

65

1500 → 1515 → 1520
1525
1500 → 1510 → 1520
1500 → 1505 → 1520

FIG.3

3/7

100

Issuance and Value Added Services

Workflow for Wallet initiated issuance and card details retrieval

Client (e.g., digital wallet, Neo-bank) 102	110 Create Cardholder → 112 Ingest cardholder parameters, perform KYC	Retrieve cardholder ID for client systems 122

ICS Platform 104

130 Administrative
Register Provider Endpoints 126

114 Verify Address

116 Create Cardholder

120 Enroll/Link with Visa Systems

Issuer Processor 106

124 Provider onboarding (BIN setup, Registration, URL Whitelisting, Sandbox Integration)

118 Record Cardholder

Issuer Bank 108

Provide BIN and set up Account of Record 128

FIG.4a

200

Issuance and Value Added Services

Workflow for Wallet initiated issuance and card details retrieval

Client (e.g., digital wallet, Neo-bank)

102

202 — Create Card / Issuance

220 — Retrieve Card Details with obfuscated PAN and CVV2; and universal CardID

ICS Platform

104

204 — Validate Cardholder

206 — Apply CardTemplate Params

216 — Enroll in CardID Service (To enable interop with other services)

218 — Card Controls at Template level?

No

Yes

222 — Apply Card Controls at Instantly Issued Card

Issuer Processor

106

208 — Create Underlying Account

212 — Generate Prepaid Reloadable Card

Issuer Bank

108

210 — Record Account with Issuer

214 — Update Ledger

FIG.4b

5/7

300

Issuance and Value Added Services

Workflow for Wallet initiated card details retrieval

Client (e.g., digitial wallet, Neo-bank) — 102

302 — (Retrieve Card Info)

Retrieve Card Details sensitive data — 314

ICS Platform — 104

304 — Validate CardID, and retrieve underlying Account ID

306 — Translate Card ID to Processor Card ID in ICS gateway

Convert CardID and Customer IDs to Visa universal IDs — 312

Issuer Processor — 106

308 — Merge Card Details, and Balance details for provided Account ID

Issuer Bank — 108

Return Record Account Balance — 310

FIG.4c

FIG.5

7/7

FIG.6

29