

WHAT IS CLAIMED IS:

1 1. A method comprising:
2 receiving, by an application computer from an application on a user
3 device, a first request to provide an access token that is associated with a primary
4 access identifier for an account, the first request comprising identifying information that
5 identifies the account, wherein the primary access identifier is an account number;
6 transmitting, by the application computer and to a directory service
7 computer, the first request, the directory service computer configured to retrieve a
8 virtual access identifier based on the identifying information; and
9 receiving, by the application computer, the access token from a token
10 service computer in response to a second request, by the directory service computer to
11 the token service computer, the second request indicating that the access token is to be
12 provisioned to the application computer, the second request comprising the virtual
13 access identifier, and wherein the access token is in the same format as the primary
14 access identifier.

1 2. The method of claim 1, wherein the primary access identifier is a
2 PAN (primary account number).

1 3. The method of claim 1, further comprising:
2 generating, by the application computer, an authorization request
3 message comprising the access token; and
4 transmitting the authorization request message to a processing computer
5 in communication with the token service computer.

1 4. The method of claim 3, wherein the access token is a payment
2 token.

1 5. The method of claim 1 further comprising:
2 generating, by the application computer, an authorization request
3 message comprising the access token; and

4 transmitting the authorization request message to a processing computer
5 in communication with the token service computer, wherein the processing computer
6 retrieves the virtual access identifier and then
7 transmits the authorization request message comprising the virtual access
8 identifier to an authorizing computer for authorization, the authorizing computer
9 determining the primary access identifier using the virtual access identifier and
10 performing an action with the primary access identifier.

1 6. The method of claim 5, wherein the authorization request message
2 is received by the token service computer from the application computer via a transport
3 computer.

1 7. The method of claim 1, wherein the user device is a mobile phone.

1 8. The method of claim 1, wherein the access token provides access
2 to secure data.

1 9. A system comprising:
2 an application computer, the application computer comprising a data
3 processor, and a computer readable medium, the computer readable medium
4 comprising code, executable by the data processor, to cause the application computer
5 to:
6 receive from an application on a user device, a first request to provide an
7 access token that is associated with a primary access identifier for an account, the first
8 request comprising identifying information that identifies the account, wherein the
9 primary access identifier is an account number,
10 transmit to a directory service computer the first request, the directory
11 service computer configured to retrieve a virtual access identifier based on the
12 identifying information; and
13 receive the access token from a token service computer in response to a
14 second request, by the directory service computer to the token service computer, the
15 second request indicating that the access token is to be provisioned to the application

16 computer, the second request comprising the virtual access identifier, and wherein the
17 access token is in the same format as the primary access identifier.

1 10. The system of claim 9, wherein the data processor is a first data
2 processor and the computer readable medium is a first computer readable medium, and
3 wherein the system further comprises:

4 the token service computer in communication with the directory service
5 computer, the token service computer comprising a second data processor and a
6 second computer readable medium coupled to the second data processor, the second
7 computer readable medium comprising code, executable by the second data processor
8 to cause the token service computer to: receive the access token, the access token
9 being present in an authorization request message, and determine the virtual access
10 identifier associated with the access token; and

11 a processing computer comprising a third data processor and a third
12 computer readable medium coupled to the third data processor, the third computer
13 readable medium comprising code, executable by the third data processor to cause the
14 processing computer to transmit the authorization request message comprising the
15 virtual access identifier to an authorizing computer for authorization, the authorizing
16 computer determining the primary access identifier using the virtual access identifier
17 and performing an action with the primary access identifier.

1 11. The system of claim 9, wherein the virtual access identifier is a
2 virtual PAN (primary account number).

1 12. The system of claim 9, wherein the application comptuer is a social
2 network application server or a merchant application server.

1 13. The system of claim 9, wherein the access token is a payment
2 token.

1 14. The system of claim 9, wherein the access token provides access
2 to secure data.

1 15. The system of claim 9, wherein the primary access identifier is a
2 PAN (primary account number).

1 16. The system of claim 9, wherein the user device is a mobile phone.

1 17. The system of claim 9, wherein the computer readable medium
2 further comprises code executable by the processor, to generate an authorization
3 request message comprising the access token, and transmit the authorization request
4 message to a processing computer in communication with the token service computer.

1 18. The system of claim 9, wherein the computer readable medium
2 further comprises code executable by the processor, to generate an authorization
3 request message comprising the access token, and transmit authorization request
4 message to a processing computer in communication with the token service computer,
5 wherein the processing computer retrieves the virtual access identifier and then
6 transmits the authorization request message comprising the virtual access identifier to
7 an authorizing computer for authorization, the authorizing computer determining the
8 primary access identifier using the virtual access identifier and performing an action with
9 the primary access identifier.

1 19. The system of claim 18, wherein the action is allowing access to
2 secure data by the user device.

1 20. The system of claim 18, wherein the token service computer and
2 the processing computer are part of a same system.