WHAT IS CLAIMED IS:

1. A method comprising:

maintaining, by a device comprising a processor and operating as a front end to a back-end service that is coupled to one or more backing data sources, a cache that has data items therein, including, for at least some of the data items, a current value subset and a next value subset corresponding to each data item;

receiving, by the device, a request for a data item;

accessing the cache for the data item, comprising:

in response to the data item not being in the cache, returning a cache miss if the data item is not in the cache, and

in response to the data item being in the cache:

returning data corresponding to a current value subset of the data item in response to the request if the current value subset is not expired,

returning data corresponding to a next value subset of the data item in response to the request if the current value subset is expired and the next value subset is not expired, or

returning a cache miss or expired data if the current value subset is expired and the next value subset is expired; and

refreshing, by the device, data items in the cache, including in response to determining that a data item has its current value subset expired, replacing the current value subset with the next value subset by changing the current pointer to point to the next data subset and requesting a new next value subset from a back-end cache of the back-end service and overwriting the current data subset with the new next value and pointed to by the next pointer, wherein the requesting the new next value subset comprises generating a request for a future value of the data item, where the request employs a time-offset parameter comprising a future expiration time of the next value subset that is later than a current time of the request, wherein the future value of the data item corresponds to the future expiration time, wherein the future expiration time indicates that the requested data item is no longer available at the requested time.

2. The method of claim 1, wherein the refreshing the data items in the cache further comprises:

receiving a response to the request,

in response to determining that the response includes new next value subset data, writing the new next value subset data into the cache as the next value subset, and

in response to determining that the response indicates that the requested future data is outside of a time window, setting up a cache entry associated with the data item for deletion.

3. The method of claim 1, wherein the replacing the current value subset with the next value subset comprises:

in response to determining that the next value subset is not present, deleting the data item from the cache, and foregoing the request, or

in response to determining that the next value subset is present, replacing the current value subset with the next value subset.

4. The method of claim 3, further comprising:

receiving a response to the request,

in response to determining that the response includes new next value subset data, writing the new next value subset data into the cache as the next value subset, and

in response to determining that the response indicates that the requested future data is outside of a time window, setting up a cache entry associated with the data item for deletion.

5. The method of claim 1, wherein the refreshing the data items in the cache further comprises in response to determining that the data item does not have its current value subset expired, performing the requesting the new next value subset in response to determining that the next value subset of the data item is going to expire within a threshold time prior to the future expiration time of the next value subset.

6. The method of claim 5, further comprising:

receiving a response to the request,

in response to determining that the response includes new next value subset data, writing the new next value subset data into the cache as the next value subset, and

in response to determining that the response indicates that the requested future data is outside of a time window, setting up a cache entry associated with the data item for deletion.

7. A system operating as a front end to a back-end service that is coupled to one or more backing data sources comprising:

a cache configured to maintain data items therein, including, for at least some of the data items, a current value subset and a next value subset corresponding to each data item;

cache access logic configured to:

receive a request for a data item;

access the cache for the data item, comprising:

in response to the data item not being in the cache, return a cache miss if the data item is not in the cache, and

in response to the data item being in the cache:

return data corresponding to a current value subset of the data item in response to the request if the current value subset is not expired,

return data corresponding to a next value subset of the data item in response to the request if the current value subset is expired and the next value subset is not expired, or

return a cache miss or expired data if the current value subset is expired and the next value subset is expired; and

cache refresher logic configured to refresh data items in the cache, including in response to a determination that a data item has its current value subset expired, replace the current value subset with the next value subset by changing the current pointer to point to the next data subset and request a new next value subset from a back-end cache of the back-end service and overwriting the current data subset with the new next value and pointed to by the next pointer, wherein the request of the new next value subset comprises

generation of a request for a future value of the data item, where the request employs a time-offset parameter comprising a future expiration time of the next value subset that is later than a current time of the request, wherein the future value of the data item corresponds to the future expiration time, wherein the future expiration time indicates that the requested data item is no longer available at the requested time.

8. The system of claim 7, wherein the refresh of the data items in the cache further comprises:

receipt of a response to the request,

in response to a determination that the response includes new next value subset data, write the new next value subset data into the cache as the next value subset, and

in response to a determination that the response indicates that the requested future data is outside of a time window, set up a cache entry associated with the data item for deletion.

9. The system of claim 7, wherein the replacement of the current value subset with the next value subset comprises:

in response to a determination that the next value subset is not present, delete the data item from the cache, and foregoing the request, or

in response to a determination that the next value subset is present, replace the current value subset with the next value subset.

10. The system of claim 9, wherein the refresh of the data items in the cache further comprises:

receipt of a response to the request,

in response to a determination that the response includes new next value subset data, write the new next value subset data into the cache as the next value subset, and

in response to a determination that the response indicates that the requested future data is outside of a time window, set up a cache entry associated with the data item for deletion.

11. The system of claim 7, wherein the refresh of the data items in the cache further comprises in response to a determination that the data item does not have its current value subset expired, perform the requesting the new next value subset in response to determining that the next value subset of the data item is going to expire within a threshold time prior to the future expiration time of the next value subset.

12. The system of claim 11, further comprising:

receipt of a response to the request,

in response to a determination that the response includes new next value subset data, write the new next value subset data into the cache as the next value subset, and

in response to a determination that the response indicates that the requested future data is outside of a time window, set up a cache entry associated with the data item for deletion.

13. A non-transitory computer-readable medium having instructions stored thereon that, in response to execution, cause a system including a processor and operating as a front end to a back-end service that is coupled to one or more backing data sources to perform operations, comprising:

maintaining a cache that has data items therein, including, for at least some of the data items, a current value subset and a next value subset corresponding to each data item;

receiving a request for a data item;

accessing the cache for the data item, comprising:

in response to the data item not being in the cache, returning a cache miss if the data item is not in the cache, and

in response to the data item being in the cache:

returning data corresponding to a current value subset of the data item in response to the request if the current value subset is not expired,

returning data corresponding to a next value subset of the data item in response to the request if the current value subset is expired and the next value subset is not expired, or

returning a cache miss or expired data if the current value subset is expired and the next value subset is expired; and

refreshing, by the device, data items in the cache, including in response to determining that a data item has its current value subset expired, replacing the current value subset with the next value subset by changing the current pointer to point to the next data subset and requesting a new next value subset from a back-end cache of the back-end service and overwriting the current data subset with the new next value and pointed to by the next pointer, wherein the requesting the new next value subset comprises generating a request for a future value of the data item, where the request employs a time-offset parameter comprising a future expiration time of the next value subset that is later than a current time of the request, wherein the future value of the data item corresponds to the future expiration time, wherein the future expiration time indicates that the requested data item is no longer available at the requested time.

14. The non-transitory computer-readable medium of claim 13, wherein the refreshing the data items in the cache further comprises:

receiving a response to the request,

in response to determining that the response includes new next value subset data, writing the new next value subset data into the cache as the next value subset, and

in response to determining that the response indicates that the requested future data is outside of a time window, setting up a cache entry associated with the data item for deletion.

15. The non-transitory computer-readable medium of claim 13, wherein the replacing the current value subset with the next value subset comprises:

in response to determining that the next value subset is not present, deleting the data item from the cache, and foregoing the request, or

in response to determining that the next value subset is present, replacing the current value subset with the next value subset.

16. The non-transitory computer-readable medium of claim 15, further comprising:

receiving a response to the request,

in response to determining that the response includes new next value subset data, writing the new next value subset data into the cache as the next value subset, and

in response to determining that the response indicates that the requested future data is outside of a time window, setting up a cache entry associated with the data item for deletion.

17. The non-transitory computer-readable medium of claim 13, wherein the refreshing the data items in the cache further comprises in response to determining that the data item does not have its current value subset expired, performing the requesting the new next value subset in response to determining that the next value subset of the data item is going to expire within a threshold time prior to the future expiration time of the next value subset.

18. The non-transitory computer-readable medium of claim 17, further comprising:

receiving a response to the request,

in response to determining that the response includes new next value subset data, writing the new next value subset data into the cache as the next value subset, and

in response to determining that the response indicates that the requested future data is outside of a time window, setting up a cache entry associated with the data item for deletion.