WHAT IS CLAIMED IS:

1. A system, comprising:

one or more computing devices configured to:

receive, at an access subsystem of a distributed multi-tenant file storage service, a request to establish a client session for file store operations on behalf of a particular client;

transmit, from the access subsystem to a metadata subsystem of the file storage service, a request for a session identifier to be associated with the client session;

provide, to the access subsystem, from the metadata subsystem, a session identifier based at least in part on a persistent session storage location at which one or more elements of metadata of the client session are stored, wherein the one or more elements include an indication of a lease associated with the client session;

cache, at the access subsystem, the session identifier and an indication of the lease, prior to a transmission of the session identifier to the particular client;

determine, at the metadata subsystem, a persistent lock storage location at which to store a lock state indicator associated with a particular file store object, wherein the lock state indicator is generated in response to a different request from the client, wherein the different request comprises the session identifier and wherein the lock state indicator comprises the session identifier;

cache, at the access subsystem, the lock state indicator;

utilize, at the access subsystem, the cached session identifier, the cached indication of the lease, and the cached lock state indicator to respond to a service request from the client directed to the particular file store object; and

in response to a determination that a timeout associated with the lease has expired, delete (a) the lock state indicator from the persistent lock storage location, and (b) the session identifier from the persistent session storage location.

2. The system as recited in claim 1, wherein the one or more computing devices are further configured to:

determine, at the access subsystem, that a different service request received from the particular client during the client session belongs to a category of lease-renewing operations; and

initiate a renewal of the lease.

3. The system as recited in claim 2, wherein to initiate the renewal of the lease, the one or more computing devices are further configured to:

determine, at the access subsystem in response to the different service request, that the lease is due to expire after a time period greater than a threshold time period; and

combine, within a single batched lease renewal request to the metadata subsystem, a plurality of requests to renew respective leases associated with respective client sessions.

4. The system as recited in claim 1, wherein said access subsystem comprises a plurality of access nodes including a particular access node at which the request to establish the client session is received, wherein the one or more computing devices are further configured to:

store, within a particular element of the one or more elements of metadata stored at the persistent session storage location, an identifier of the particular access node.

5. A method, comprising:

performing, by one or more computing devices:

transmitting, from an access subsystem of a distributed file storage service to a metadata subsystem of the file storage service, a request for a session identifier to be associated with a client session of a particular client;

receiving, at the access subsystem from the metadata subsystem, a session identifier based at least in part on a persistent session storage location at which one or more elements of metadata of the client session are stored;

caching the session identifier at the access subsystem prior to a transmission of the session identifier to the particular client;

receiving, at the access subsystem, a particular request from the client, for which a lock is to be obtained on a particular file store object, wherein the particular request includes the session identifier;

determining, at the metadata subsystem, that a conflicting lock state indicator associated with the particular file store object has been created on behalf of a different client; and

rejecting the particular request.

6. The method as recited in claim 5, further comprising performing, by the one or more computing devices:

receiving, at the access subsystem, a second request from the client, for which another lock is to be obtained on a different file store object, wherein the other request comprises the session identifier;

determining, at the metadata subsystem, a persistent lock storage location at which to store a lock state indicator associated with the different file store object, wherein the lock state indicator comprises the session identifier;

caching, at the access subsystem, the lock state indicator; and

utilizing, at the access subsystem, the cached session identifier and the cached indication of the lock state indicator to respond to another request from the client.

7. The method as recited in claim 5, further comprising performing, by the one or more computing devices:

determining, at the access subsystem, that the other request belongs to a category of lease-renewing operations associated with the file store object; and

initiating a renewal of the lease.

8. The method as recited in claim 7, wherein said initiating the renewal of the lease comprises:

determining, at the access subsystem in response to the other request, that the lease is due to expire after a time period greater than a threshold time period; and

combining, within a single batched lease renewal request to the metadata subsystem, a plurality of requests to renew respective leases associated with respective client sessions.

9. The method as recited in claim 7, wherein said initiating the renewal of the lease comprises:

determining, at the access subsystem as part of an operation performed in response to the other request, that the lease is due to expire after a time period smaller than a threshold time period; and

transmitting an un-batched lease renewal request to the metadata subsystem.

10. The method as recited in claim 5, further comprising performing, by the one or more computing devices:

configuring a first validity expiration timeout setting for the session identifier at the access subsystem cache;

configuring a second validity expiration timeout for the session identifier at the metadata subsystem, wherein the first validity expiration timeout is smaller than the second validity expiration timeout.

11. The method as recited in claim 5, wherein said access subsystem comprises a plurality of access nodes including a particular access node, further comprising performing, by the one or more computing devices:

receiving, at the particular access node, prior to said transmitting the request for a session identifier to the metadata subsystem, a request to establish the client session from the particular client; and

storing, within a particular element of the one or more elements of metadata stored at the persistent session storage location, an identifier of the particular access node.

12. A non-transitory computer-accessible storage medium storing program instructions that when executed on one or more processors:

transmit, from an access subsystem of a distributed file storage service to a metadata subsystem of the file storage service, a request for a session identifier to be associated with a client session of a particular client;

receive, at the access subsystem from the metadata subsystem, a session identifier based at least in part on a persistent session storage location at which one or more elements of metadata of the client session are stored;

cache the session identifier at the access subsystem prior to a transmission of the session identifier to the particular client;

receive, at the access subsystem, a lock state indicator of a file store object from the metadata subsystem, wherein the lock state indicator is generated at the metadata subsystem in response to a particular request from the client during the client session;

cache, at the access subsystem, the lock state indicator; and

determine a response, at the access subsystem, to another request from the client directed to the particular file store object based at least in part on the cached session identifier and the cached indication of the lock state indicator.

13. The non-transitory computer-accessible storage medium as recited in claim 12, wherein the one or more elements of metadata comprise an indication of a lease associated with the client session, wherein the instructions when executed on the one or more processors:

cache, at the access subsystem, the indication of the lease.

14. The non-transitory computer-accessible storage medium as recited in claim 12, wherein the instructions when executed on the one or more processors:

determine, at the access subsystem, that the other request belongs to a category of lease-renewing operations associated with the file store object; and

initiate a renewal of the lease from the access subsystem.

15. The non-transitory computer-accessible storage medium as recited in claim 14, wherein to initiate the renewal of the lease, the instructions when executed on the one or more processors:

determine, at the access subsystem in response to the other request, that the lease is due to expire after a time period greater than a threshold time period; and

combine, within a single batched lease renewal request to the metadata subsystem, a plurality of requests to renew respective leases associated with respective client sessions.

WHAT IS CLAIMED IS:

1. A system, comprising:

one or more computing devices configured to:

receive, at an access subsystem of a distributed multi-tenant file storage service, a request to establish a client session for file store operations on behalf of a particular client;

transmit, from the access subsystem to a metadata subsystem of the file storage service, a request for a session identifier to be associated with the client session;

provide, to the access subsystem, from the metadata subsystem, a session identifier based at least in part on a persistent session storage location at which one or more elements of metadata of the client session are stored, wherein the one or more elements include an indication of a lease associated with the client session;

cache, at the access subsystem, the session identifier and an indication of the lease, prior to a transmission of the session identifier to the particular client;

determine, at the metadata subsystem, a persistent lock storage location at which to store a lock state indicator associated with a particular file store object, wherein the lock state indicator is generated in response to a different request from the client, wherein the different request comprises the session identifier and wherein the lock state indicator comprises the session identifier;

cache, at the access subsystem, the lock state indicator;

utilize, at the access subsystem, the cached session identifier, the cached indication of the lease, and the cached lock state indicator to respond to a service request from the client directed to the particular file store object; and

in response to a determination that a timeout associated with the lease has expired, delete (a) the lock state indicator from the persistent lock storage location, and (b) the session identifier from the persistent session storage location.

2. The system as recited in claim 1, wherein the one or more computing devices are further configured to:

determine, at the access subsystem, that the different request received from the particular client belongs to a category of lease-renewing operations; and

initiate a renewal of the lease.

3. The system as recited in claim 2, wherein to initiate the renewal of the lease, the one or more computing devices are further configured to:

determine, at the access subsystem in response to the different request, that the lease is due to expire after a time period greater than a threshold time period; and

combine, within a single batched lease renewal request to the metadata subsystem, a plurality of requests to renew respective leases associated with respective client sessions.

4. The system as recited in claim 1, wherein said access subsystem comprises a plurality of access nodes including a particular access node at which the request to establish the client session is received, wherein the one or more computing devices are further configured to:

store, within a particular element of the one or more elements of metadata stored at the persistent session storage location, an identifier of the particular access node.

5. The system as recited in claim 1, wherein the session identifier and the lock state indicator are formatted in accordance with one of: (a) a version of NFS (Network File System) or (b) a version of SMB (Server Message Block).

6. A method, comprising:

performing, by one or more computing devices:

transmitting, from an access subsystem of a distributed file storage service to a metadata subsystem of the file storage service, a request for a session identifier to be associated with a client session of a particular client;

receiving, at the access subsystem from the metadata subsystem, a session identifier based at least in part on a persistent session storage location at which one or more elements of metadata of the client session are stored;

caching the session identifier at the access subsystem prior to a transmission of the session identifier to the particular client;

receiving, at the access subsystem, a particular request from the client, for which a lock is to be obtained on a particular file store object, wherein the particular request includes the session identifier;

determining, at the metadata subsystem, that a conflicting lock state indicator associated with the particular file store object has been created on behalf of a different client; and

rejecting the particular request.

7. The method as recited in claim 6, further comprising performing, by the one or more computing devices:

receiving, at the access subsystem, another request from the client, for which another lock is to be obtained on a different file store object, wherein the other request comprises the session identifier;

determining, at the metadata subsystem, a persistent lock storage location at which to store a lock state indicator associated with the different file store object, wherein the lock state indicator comprises the session identifier;

caching, at the access subsystem, the lock state indicator; and

utilizing, at the access subsystem, the cached session identifier and the cached indication of the lock state indicator to respond to an additional request from the client.

8. The method as recited in claim 7, wherein the one or more elements of metadata comprise an indication of a lease associated with the client session, and further comprising performing, by the one or more computing devices:

caching, at the access subsystem, the indication of the lease.

9. The method as recited in claim 7, further comprising performing, by the one or more computing devices:

determining, at the access subsystem, that the other request belongs to a category of lease-renewing operations associated with the file store object; and

initiating a renewal of the lease.

10. The method as recited in claim 9, wherein said initiating the renewal of the lease comprises:

determining, at the access subsystem in response to the other request, that the lease is due to expire after a time period greater than a threshold time period; and

combining, within a single batched lease renewal request to the metadata subsystem, a plurality of requests to renew respective leases associated with respective client sessions.

11. The method as recited in claim 9, wherein said initiating the renewal of the lease comprises:

determining, at the access subsystem as part of an operation performed in response to the other request, that the lease is due to expire after a time period smaller than a threshold time period; and

transmitting an un-batched lease renewal request to the metadata subsystem.

12. The method as recited in claim 7, further comprising performing, by the one or more computing devices:

configuring a first validity expiration timeout setting for the session identifier at the access subsystem cache;

configuring a second validity expiration timeout for the session identifier at the metadata subsystem, wherein the first validity expiration timeout is smaller than the second validity expiration timeout.

13. The method as recited in claim 12, wherein in accordance with a file system protocol being used for the client session, a particular lease timeout is associated with the client session, wherein the second validity expiration timeout is greater than the particular lease timeout, and wherein the first validity expiration timeout is based at least in part on a difference between the second validity expiration timeout and the particular lease timeout.

14. The method as recited in claim 7, wherein said access subsystem comprises a plurality of access nodes including a particular access node, and further comprising performing, by the one or more computing devices:

receiving, at the particular access node, prior to said transmitting the request for a session identifier to the metadata subsystem, a request to establish the client session from the particular client; and

storing, within a particular element of the one or more elements of metadata stored at the persistent session storage location, an identifier of the particular access node.

15. The method as recited in claim 14, further comprising performing, by the one or more computing devices:

determining, at the particular access node based on a workload balancing analysis, that a network connection used for the request to establish the client session is to be closed; and

removing, from the particular element of metadata, the identifier of the particular access node.

16. The method as recited in claim 7, wherein the different file store object belongs to a first file store, further comprising performing, by the one or more computing devices:

designating, for the first file store, a persistent storage object in which lock state indicators for a plurality of objects of the file store are to be stored, wherein said determining, at the metadata subsystem, of the persistent lock storage location comprises identifying a particular portion of the persistent storage object at which to store the lock state indicator.

17. The method as recited in claim 6, wherein the session state identifier and the lock state indicator are formatted in accordance with one of: (a) a version of NFS (Network File System) or (b) a version of SMB (Server Message Block).

18. A non-transitory computer-accessible storage medium storing program instructions that when executed on one or more processors:

transmit, from an access subsystem of a distributed file storage service to a metadata subsystem of the file storage service, a request for a session identifier to be associated with a client session of a particular client;

receive, at the access subsystem from the metadata subsystem, a session identifier based at least in part on a persistent session storage location at which one or more elements of metadata of the client session are stored;

cache the session identifier at the access subsystem prior to a transmission of the session identifier to the particular client;

receive, at the access subsystem, a lock state indicator of a file store object from the metadata subsystem, wherein the lock state indicator is generated at the metadata subsystem in response to a particular request from the client during the client session;

cache, at the access subsystem, the lock state indicator; and

determine a response, at the access subsystem, to another request from the client directed to the particular file store object based at least in part on the cached session identifier and the cached indication of the lock state indicator.

19. The non-transitory computer-accessible storage medium as recited in claim 18, wherein the one or more elements of metadata comprise an indication of a lease associated with the client session, wherein the instructions when executed on the one or more processors:

cache, at the access subsystem, the indication of the lease.

20. The non-transitory computer-accessible storage medium as recited in claim 19, wherein the instructions when executed on the one or more processors:

determine, at the access subsystem, that the other request belongs to a category of lease-renewing operations associated with the file store object; and

initiate a renewal of the lease from the access subsystem.

21. The non-transitory computer-accessible storage medium as recited in claim 20, wherein to initiate the renewal of the lease, the instructions when executed on the one or more processors:

determine, at the access subsystem in response to the other request, that the lease is due to expire after a time period greater than a threshold time period; and

combine, within a single batched lease renewal request to the metadata subsystem, a plurality of requests to renew respective leases associated with respective client sessions.

22. The non-transitory computer-accessible storage medium as recited in claim 19, wherein the session state identifier and the lock state indicator are formatted in accordance with one of: (a) a version of NFS (Network File System) or (b) a version of SMB (Server Message Block).