

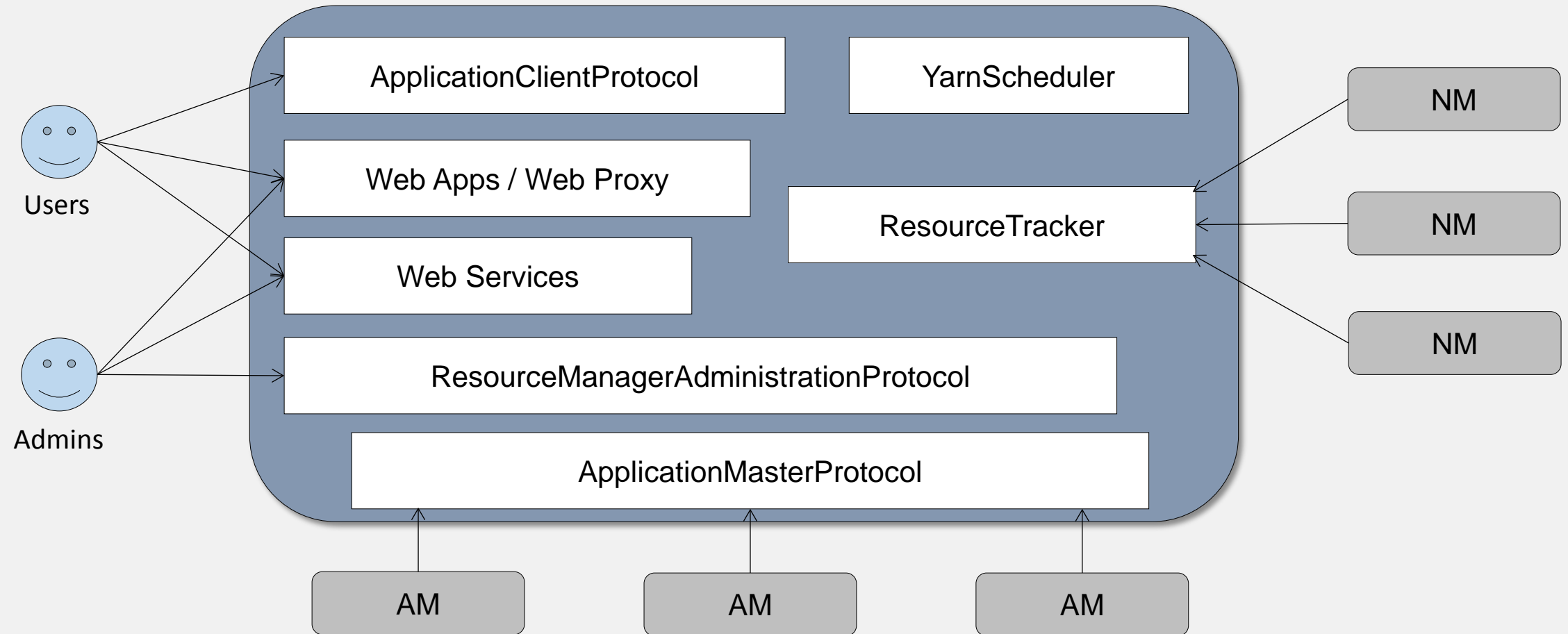


CLOUD COMPUTING APPLICATIONS

YARN: Resource Manager

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ResourceManager Interfaces



Resource Manager Interfaces

- ApplicationClientProtocol
 - Submit an application
 - Kill an application
 - Query application, scheduler, cluster status
- Web Apps
 - UI for users to track status of cluster, scheduler, and applications

User-Facing Interfaces

- Web Proxy
 - Users provided with a proxy URL when application submitted
 - AM can update tracking URL to an application-specific UI
 - Proxy redirects users to tracking URL
- Web Services
 - Avoid programmatic screen-scraping of web apps

User-Facing Interfaces

- ResourceManagerAdministrationProtocol
 - Control access of users
 - Decommission or restrict nodes
 - Reconfigure scheduler

Node Manager-Facing Interface

- ResourceTracker
 - Node registration and liveness monitoring
 - Process container status updates and notify scheduler

Application Master-Facing Interface

- ApplicationMasterProtocol
 - AM registration and liveness monitoring
 - Notify scheduler of container request updates from AMs
 - Notify AMs of granted containers and completed containers
 - Notify AMs of capacity remaining in their queue
 - Tracking URL management

Scheduling Interfaces

- YarnScheduler
 - Pluggable interface
 - FIFOScheduler, CapacityScheduler, and FairScheduler bundled with YARN
 - Active area of research in YARN