

Authentication and security

Authentication Flow

1. **Login** (`/login`)
 - User submits credentials
 - API returns JWT token
 - Token stored in `localStorage` as `jwt`
 - User details and roles stored in `localStorage`
2. **Token Management**
 - JWT token sent with every API request via `Authorization` header
 - Token validated on each route navigation via `AuthGuard`
 - Invalid tokens redirect to login page
3. **Logout**
 - Clear `localStorage`
 - Redirect to login page

Guards

AuthGuard (`auth.guard.ts`)

- Protects all authenticated routes
- Validates JWT token on navigation
- Calls `guardianTokens()` API to verify token validity
- Redirects to `/login` if authentication fails

```
// Usage in routing
{
  path: 'home',
  loadChildren: () => import('./home/home.module').then(m => m.HomeModule),
  canActivate: [AuthGuard]
}
```

RoleGuard (`role.guard.ts`)

- Provides role-based access control
- Checks user roles from `localStorage`

- Can be used for feature-specific authorization

Security Best Practices

1. **Token Storage:** JWT tokens stored in `localStorage` (consider `httpOnly` cookies for enhanced security)
 2. **HTTPS:** Always use HTTPS in production
 3. **Token Expiration:** Implement token refresh mechanism
 4. **XSS Protection:** Angular's built-in sanitization helps prevent XSS
 5. **CSRF Protection:** Use Angular's CSRF token support for POST requests
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