Automating App Store Connect

Session 303

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Automation

App Store Connect API

- Xcode
- Transporter
- Reporter

NEW
App Store Connect API

Standards-based
Secure
Consistent
Documented

GET /v1/users?sort=lastName
{
  "data": [{
    "type": "users",
    "id": "17cbd794-94a3-c7b0-1051",
    "attributes": {
      "firstName": "Kate",
      "lastName": "Bell"
    }
  },
  {
    "type": "users",
    "id": "24e811a2-2ad0-46e4-b632",
    "attributes": {
      "id": "24e811a2-2ad0-46e4-b632",
      "attributes": {
        "firstName": "John",
        "lastName": "Doe"
      }
    }
  }
}
App Store Connect API

- Standards-based
- Secure
- Consistent
- Documented
App Store Connect API

Standards-based
Secure
Consistent
Documented

GET /v1/apps
GET /v1/builds
GET /v1/betaTesters
GET /v1/salesReports
GET /v1/financeReports
GET /v1/bundleIds
GET /v1/profiles
GET /v1/certificates
GET /v1/betaAppReviewSubmissions
GET /v1/userInvitations
App Store Connect API

Standards-based
Secure
Consistent
Documented
What’s Included

- TestFlight
- Users and Access
- Provisioning
- Reports
What’s Included

TestFlight
• Manage testers and groups
• Submit for review
• Public links
What’s Included

Users and Roles
• Add and remove users
• Assign roles
• Manage limited app access
What’s Included

Provisioning
• Add development devices
• Register bundle IDs
• Create certificates
• Manage profiles
What’s Included

Reports
• Download sales and financial reports
• Easily switch from Reporter
What’s Included

Transporter changes
- Linux support
- API tokens
Getting data

Changing data

Relationships

Errors

Access and authentication

Best practices
api.appstoreconnect.apple.com
GET api.appstoreconnect.apple.com/v1/users
GET api.appstoreconnect.apple.com/v1/users

HTTP/1.1 200 OK
{
  "data": [{
    "type": "users",
    "id": "17cbd794-94a3-c7b0-1051",
    "attributes": {
      "firstName": "Kate",
      "lastName": "Bell",
      "email": "kate-bell@mac.com",
      ...
    },
    "relationships": {...},
    "links": {
      "self": "https://api.appstoreconnect.apple.com/v1/users/17cbd794-94a3-c7b0-1051"
    }
  },
  ...
}
> GET api.appstoreconnect.apple.com/v1/users

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    "attributes": {
      "firstName": "Kate",
      "lastName": "Bell",
      "email": "kate-bell@mac.com",
    }
  },
  ...
  ]
  "relationships": {...},
  "links": {
    "self": "https://api.appstoreconnect.apple.com/v1/users/17cbd794-94a3-c7b0-1051"
  }
}
}
GET api.appstoreconnect.apple.com/v1/users

HTTP/1.1 200 OK

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    "data": [{
        "type": "users",
        "id": "17cbd794-94a3-c7b0-1051",
        "attributes": {
            "firstName": "Kate",
            "lastName": "Bell",
            "email": "kate-bell@mac.com",
            ...
        },
        "relationships": {...},
        "links": {
            "self": "https://api.appstoreconnect.apple.com/v1/users/17cbd794-94a3-c7b0-1051"
        }
    },
    {
        ...
    }
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> GET api.appstoreconnect.apple.com/v1/users

HTTP/1.1 200 OK
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    "data": [{
        "type": "users",
        "id": "17cbd794-94a3-c7b0-1051",
        "attributes": {
            "firstName": "Kate",
            "lastName": "Bell",
            "email": "kate-bell@mac.com",
            ...
        },
        "relationships": {...},
        "links": {
            "self": "https://api.appstoreconnect.apple.com/v1/users/17cbd794-94a3-c7b0-1051"
        }
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    {
    }
    },
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      "id": "17cbd794-94a3-c7b0-1051",
      "attributes": {
        "firstName": "Kate",
        "lastName": "Bell",
        "email": "kate-bell@mac.com",
        ...
      },
      "relationships": {...
    },
    "links": {
      "self": "https://api.appstoreconnect.apple.com/v1/users/17cbd794-94a3-c7b0-1051"
    }
  },
  {
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HTTP/1.1 200 OK
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      "type": "users",
      "id": "17cbd794-94a3-c7b0-1051",
      "attributes": {
        "firstName": "Kate",
        "lastName": "Bell",
        "email": "kate-bell@mac.com",
        ...
      },
      "relationships": {...},
      "links": {
        "self": "https://api.appstoreconnect.apple.com/v1/users/17cbd794-94a3-c7b0-1051"
      }
    },
    {...
  }
}
> GET api.appstoreconnect.apple.com/v1/users

HTTP/1.1 200 OK

```json
{
  "data": [ {
    "type": "users",
    "id": "17cbd794-94a3-c7b0-1051",
    "attributes": {
      "firstName": "Kate",
      "lastName": "Bell",
      "email": "kate-bell@mac.com",
      ...
    },
    "relationships": {}
  },
  ...
},
"relationships": {}},
"links": {
  "self": "https://api.appstoreconnect.apple.com/v1/users/17cbd794-94a3-c7b0-1051"
}
}
```
> GET api.appstoreconnect.apple.com/v1/users/17cbd794-94a3-c7b0-1051
> GET api.appstoreconnect.apple.com/v1/users/17cbd794-94a3-c7b0-1051

HTTP/1.1 200 OK
{
   "data": {
      "type": "users",
      "id": "17cbd794-94a3-c7b0-1051",
      "attributes": {
         "firstName": "Kate",
         "lastName": "Bell",
         "email": "kate-bell@mac.com",
         ...
      },
      "relationships": {...},
      "links": {
         "self": "../v1/users/17cbd794-94a3-c7b0-1051"
      }
   }
}
]
Getting data
Changing data
Relationships
Errors
Access and authentication
Best practices
Getting data
Changing data
Relationships
Errors
Access and authentication
Best practices
<table>
<thead>
<tr>
<th>Operation</th>
<th>HTTP Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Get a resource or a list of resources</td>
<td>GET</td>
</tr>
<tr>
<td>Create a resource</td>
<td>POST</td>
</tr>
<tr>
<td>Change a resource</td>
<td>PATCH</td>
</tr>
<tr>
<td>Delete a resource</td>
<td>DELETE</td>
</tr>
</tbody>
</table>
POST /v1/userInvitations
{
   "data": {
      "type": "userInvitations",
      "attributes": {
         "firstName": "John",
         "lastName": "Appleseed",
         "email": "john-appleseed@mac.com",
         "roles": ["DEVELOPER"],
         "allAppsVisible": true
      }
   }
}
POST /v1/userInvitations
{
   "data": {
      "type": "userInvitations",
      "attributes": {
         "firstName": "John",
         "lastName": "Appleseed",
         "email": "john-appleseed@mac.com",
         "roles": ["DEVELOPER"],
         "allAppsVisible": true
      }
   }
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POST /v1/userInvitations

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    "data": {
        "type": "userInvitations",
        "attributes": {
            "firstName": "John",
            "lastName": "Appleseed",
            "email": "john-appleseed@mac.com",
            "roles": ["DEVELOPER"],
            "allAppsVisible": true
        }
    }
}

POST /v1/userInvitations
{
    "data": {
        "type": "userInvitations",
        "attributes": {
            "firstName": "John",
            "lastName": "Appleseed",
            "email": "john-appleseed@mac.com",
            "roles": ["DEVELOPER"],
            "allAppsVisible": true
        }
    }
}
}
POST /v1/userInvitations
{
    "data": {
        "type": "userInvitations",
        "attributes": {
            "firstName": "John",
            "lastName": "Appleseed",
            "email": "john-appleseed@mac.com",
            "roles": ["DEVELOPER"],
            "allAppsVisible": true
        }
    }
}
}
POST /v1/userInvitations

HTTP/1.1 201 CREATED
{
  "data": {
    "type": "userInvitations",
    "id": "24e811a2-2ad0-46e4-b632",
    "attributes": {
      "firstName": "John",
      "lastName": "Appleseed",
      "email": "john-appleseed@mac.com",
      "roles": ["DEVELOPER"],
      "allAppsVisible": true,
      "expirationDate": "2018-06-10T13:15:00"
    },
    "links": {
      "self": "../v1/userInvitations/24e811a2-2ad0-46e4-b632"
    }
  }
}
POST /v1/userInvitations

HTTP/1.1 201 CREATED

{
  "data": {
    "type": "userInvitations",
    "id": "24e811a2-2ad0-46e4-b632",
    "attributes": {
      "firstName": "John",
      "lastName": "Appleseed",
      "email": "john-appleseed@mac.com",
      "roles": ["DEVELOPER"],
      "allAppsVisible": true,
      "expirationDate": "2018-06-10T13:15:00"
    },
    "links": {
      "self": "../v1/userInvitations/24e811a2-2ad0-46e4-b632"
    }
  }
}
> POST /v1/userInvitations

HTTP/1.1 201 CREATED
{
    "data": {
        "type": "userInvitations",
        "id": "24e811a2-2ad0-46e4-b632",
        "attributes": {
            "firstName": "John",
            "lastName": "Appleseed",
            "email": "john-appleseed@mac.com",
            "roles": ["DEVELOPER"],
            "allAppsVisible": true,
            "expirationDate": "2018-06-10T13:15:00"
        },
        "links": {
            "self": "../v1/userInvitations/24e811a2-2ad0-46e4-b632"
        }
    }
}
> POST /v1/userInvitations

HTTP/1.1 201 CREATED
{
    "data": {
        "type": "userInvitations",
        "id": "24e811a2-2ad0-46e4-b632",
        "attributes": {
            "firstName": "John",
            "lastName": "Appleseed",
            "email": "john-appleseed@mac.com",
            "roles": ["DEVELOPER"],
            "allAppsVisible": true,
            "expirationDate": "2018-06-10T13:15:00"
        }
    },
    "links": {
        "self": "../v1/userInvitations/24e811a2-2ad0-46e4-b632"
    }
}
> PATCH /v1/users/24e811a2-2ad0-46e4-b632
{
  "data": {
    "type": "users",
    "id": "24e811a2-2ad0-46e4-b632",
    "attributes": {
      "roles": ["DEVELOPER", "MARKETING"]
    }
  }
}
> PATCH /v1/users/24e811a2-2ad0-46e4-b632

```
{
  "data": {
    "type": "users",
    "id": "24e811a2-2ad0-46e4-b632",
    "attributes": {
      "roles": ["DEVELOPER", "MARKETING"]
    }
  }
}
```
> PATCH /v1/users/24e811a2-2ad0-46e4-b632

HTTP/1.1 200 OK
{
    "data": {
        "type": "users",
        "id": "24e811a2-2ad0-46e4-b632",
        "attributes": {
            "firstName": "John",
            "lastName": "Appleseed",
            "email": "john-appleseed@mac.com",
            "roles": ["DEVELOPER", "MARKETING"],
            "allAppsVisible": true
        }
    },
    "links": {
        "self": ".../v1/userInvitations/24e811a2-2ad0-46e4-b632"
    }
}
DELETE /v1/users/24e811a2-2ad0-46e4-b632
> DELETE /v1/users/24e811a2-2ad0-46e4-b632

HTTP/1.1 204 NO CONTENT
Demo

Sehoon Shon, TestFlight Engineer
Getting data
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Relationships
Errors
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Best practices
Getting data
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Best practices
Beta Group

Beta Tester

Beta Tester

Beta Tester
> GET /v1/betaGroups

HTTP/1.1 200 OK

{
    "data": [{
        "type": "betaGroups",
        "id": "55099ada-d790-4db1-bea5",
        "attributes": {...},
        "relationships": {
            "app": {...},
            "betaTesters": {...},
            "builds": {...}
        },
        "links": {
            "self": "/v1/betaGroups/55099ada-d790-4db1-bea5"
        }
    },
    {
        ...
    }
}
> GET /v1/betaGroups

HTTP/1.1 200 OK
{
  "data": [{
    "type": "betaGroups",
    "id": "55099ada-d790-4db1-bea5",
    "attributes": {...},
    "relationships": {
      "app": {...},
      "betaTesters": {...},
      "builds": {...}
    },
    "links": {
      "self": "/v1/betaGroups/55099ada-d790-4db1-bea5",
    }
  },
  {
GET /v1/betaGroups

HTTP/1.1 200 OK
{
  "data": [
    {
      "type": "betaGroups",
      "id": "55099ada-d790-4db1-bea5",
      "attributes": {...},
      "relationships": {
        "app": {...},
        "betaTesters": {
          "links": {
            "self": "/v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters",
            "related": "/v1/betaGroups/55099ada-d790-4db1-bea5/betaTesters"
          }
        },
        "builds": {...}
      }
    }
  ]
}
GET /v1/betaGroups

HTTP/1.1 200 OK
{
  "data": [{
    "type": "betaGroups",
    "id": "55099ada-d790-4db1-bea5",
    "attributes": {...},
    "relationships": {
      "app": {...},
      "betaTesters": {
        "links": {
          "self": "/v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters",
          "related": "/v1/betaGroups/55099ada-d790-4db1-bea5/betaTesters"
        }
      },
      "builds": {...}
    }
  }
}
> POST /v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters

{
    "data": [
        {
            "type": "betaTesters",
            "id": "3789c90b-f697-4157-8983"
        },
        {
            "type": "betaTesters",
            "id": "4277b871-ce4e-4fc7-9e34"
        }
    ]
}
POST /v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters

{
  "data": [
    {
      "type": "betaTesters",
      "id": "3789c90b-f697-4157-8983"
    },
    {
      "type": "betaTesters",
      "id": "4277b871-ce4e-4fc7-9e34"
    }
  ]
}
> POST /v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters

HTTP/1.1 204 NO CONTENT
GET /v1/betaGroups

HTTP/1.1 200 OK
{
    "data": [{
        "type": "betaGroups",
        "id": "55099ada-d790-4db1-bea5",
        "attributes": {...},
        "relationships": {
            "app": {...},
            "betaTesters": {
                "links": {
                    "self": "/v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters",
                    "related": "/v1/betaGroups/55099ada-d790-4db1-bea5/betaTesters"
                }
            },
            "builds": {...}
        }
    }
},
}
> GET /v1/betaGroups

HTTP/1.1 200 OK
{
    "data": [{
        "type": "betaGroups",
        "id": "55099ada-d790-4db1-bea5",
        "attributes": {...},
        "relationships": {
            "app": {...},
            "betaTesters": {
                "links": {
                    "self": "/v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters",
                    "related": "/v1/betaGroups/55099ada-d790-4db1-bea5/betaTesters"
                }
            }
        },
        "builds": {...}
    }
},
}
> GET /v1/betaGroups

HTTP/1.1 200 OK
{
    "data": [{
        "type": "betaGroups",
        "id": "55099ada-d790-4db1-bea5",
        "attributes": {...},
        "relationships": {
            "app": {...},
            "betaTesters": {
                "links": {
                    "self": "/v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters",
                    "related": "/v1/betaGroups/55099ada-d790-4db1-bea5/betaTesters"
                }
            },
            "builds": {...}
        }
    },
    {
    }
}
HTTP/1.1 200 OK
{
    "data": [
        {
            "type": "betaTesters",
            "id": "4277b871-ce4e-4fc7-9e34",
            "attributes": {
                "firstName": "John",
                "lastName": "Appleseed",
                "email": "john-appleseed@mac.com",
                "inviteType": "EMAIL"
            }
        },
        ...
    ],
    "relationships": {}
}

GET /v1/betaGroups/55099ada-d790-4db1-bea5/betaTesters
> GET /v1/betaGroups?include=betaTesters
> GET /v1/betaGroups?include=betaTesters
GET /v1/betaGroups?include=betaTesters
> GET /v1/betaGroups?include=betaTesters

HTTP/1.1 200 OK
{
  "data": [{
    "type": "betaGroups",
    "id": "55099ada-d790-4db1-bea5",
    "attributes": {...},
    "relationships": {
      "betaTesters": {
        "links": {
          "self": "/v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters",
          "related": "/v1/betaGroups/55099ada-d790-4db1-bea5/betaTesters"
        },
        "data": [
          { "type": "betaTesters", "id": "3789c90b-f697-4157-8983" },
          { "type": "betaTesters", "id": "4277b871-ce4e-4fc7-9e34" }
        ]
      }
    }
  }
}
> GET /v1/betaGroups?include=betaTesters

HTTP/1.1 200 OK
{
  "data": [
    {
      "type": "betaGroups",
      "id": "55099ada-d790-4db1-bea5",
      "attributes": {...},
      "relationships": {
        "betaTesters": {
          "links": {
            "self": "/v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters",
            "related": "/v1/betaGroups/55099ada-d790-4db1-bea5/betaTesters"
          },
          "data": [
            { "type": "betaTesters", "id": "3789c90b-f697-4157-8983" },
            { "type": "betaTesters", "id": "4277b871-ce4e-4fc7-9e34" }
          ]
        }
      }
    }
  ]
}
GET /v1/betaGroups?include=betaTesters

HTTP/1.1 200 OK

{
  "data": [{
    "type": "betaGroups",
    "id": "55099ada-d790-4db1-bea5",
    "attributes": {...},
    "relationships": {
      "betaTesters": {
        "links": {
          "self": "/v1/betaGroups/55099ada-d790-4db1-bea5/relationships/betaTesters",
          "related": "/v1/betaGroups/55099ada-d790-4db1-bea5/betaTesters"
        },
        "data": [
          { "type": "betaTesters", "id": "3789c90b-f697-4157-8983" },
          { "type": "betaTesters", "id": "4277b871-ce4e-4fc7-9e34" }
        ]
      },
      ...]}}
GET /v1/betaGroups?include=betaTesters

```json
"relationships": {
  "betaTesters": {
    "data": [
      {
        "type": "betaTesters",
        "id": "3789c90b-f697-4157-8983"
      },
      {
        "type": "betaTesters",
        "id": "4277b871-ce4e-4fc7-9e34"
      }
    ]
  }
},

"include": [{
  "type": "betaTesters",
  "id": "4277b871-ce4e-4fc7-9e34",
  "attributes": {
    "firstName": "John",
    "lastName": "Appleseed",
    "email": "john-appleseed@mac.com",
    "inviteType": "EMAIL"
  }
}]
```
GET /v1/betaGroups?include=betaTesters

```
"relationships": {
   "betaTesters": {
      "data": [
         { "type": "betaTesters", "id": "3789c90b-f697-4157-8983" },
         { "type": "betaTesters", "id": "4277b871-ce4e-4fc7-9e34" }
      ]
   }
},

"include": [
   {
      "type": "betaTesters",
      "id": "4277b871-ce4e-4fc7-9e34",
      "attributes": {
         "firstName": "John",
         "lastName": "Appleseed",
         "email": "john-appleseed@mac.com",
         "inviteType": "EMAIL"
      }
   }
],
```
Demo

Sehoon Shon, TestFlight Engineer
Getting data
Changing data
Relationships
Errors
Access and authentication
Best practices
GET /v1/betaTesters?filter[emaill]=kate-bell%22mac.com

HTTP/1.1 400 Bad Request
{
    "errors": [
        {
            "status": "400",
            "id": "5becf2db-2f12-4d6a-9dc2-6ceb33c683b4",
            "title": "A parameter has an invalid value",
            "detail": "'emaill' is not a valid filter type",
            "code": "PARAMETER_ERROR.INVALID",
            "source": {
                "parameter": "filter[emaill]"
            }
        }
    ]
}
> GET /v1/betaTesters?filter[emaill]=kate-bell%22mac.com

HTTP/1.1 400 Bad Request
{
  "errors": [
    {
      "status": "400",
      "id": "5becf2db-2f12-4d6a-9dc2-6ceb33c683b4",
      "title": "A parameter has an invalid value",
      "detail": "'emaill' is not a valid filter type",
      "code": "PARAMETER_ERROR.INVALID",
      "source": {
        "parameter": "filter[emaill]"
      }
    }
  ]
}
GET /v1/betaTesters?filter[emaill]=kate-bell%22mac.com

HTTP/1.1 400 Bad Request
{
    "errors": [
        {
            "status": "400",
            "id": "5becf2db-2f12-4d6a-9dc2-6ceb33c683b4",
            "title": "A parameter has an invalid value",
            "detail": "'emaill' is not a valid filter type",
            "code": "PARAMETER_ERROR.INVALID",
            "source": {
                "parameter": "filter[emaill]"
            }
        }
    ]
}
> GET /v1/betaTesters?filter[emaill]=kate-bell%22mac.com

HTTP/1.1 400 Bad Request
{
    "errors": [
        {
            "status": "400",
            "id": "5becf2db-2f12-4d6a-9dc2-6ceb33c683b4",
            "title": "A parameter has an invalid value",
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      }
    }
  ]
}
Getting data
Changing data
Relationships
Errors
Access and authentication
Best practices
Getting data
Changing data
Relationships
Errors
Access and authentication
Best practices
Access and Authentication
api.appstoreconnect.apple.com/v1/apps

.../users

.../userInvitations

.../betaTesters

.../builds
> GET api.appstoreconnect.apple.com/v1/apps
> GET api.appstoreconnect.apple.com/v1/apps

HTTP/1.1 401 UNAUTHORIZED
{
   "errors": [
      {
         "status": "401",
         "code": "NOT_AUTHORIZED",
         "title": "The authentication credentials are missing or invalid."
      }
   ]
}
HTTP/1.1 401 UNAUTHORIZED
{
  "errors": [
    {
      "status": "401",
      "code": "NOT_AUTHORIZED",
      "title": "The authentication credentials are missing or invalid."
    },
    {
      "status": "401",
      "code": "NOT_AUTHORIZED",
      "title": "The authentication credentials are missing or invalid."
    }
  ]
}
Authentication Credentials
Authentication Credentials

Context
Authentication Credentials

Context
Security
Create API Key
Generate tokens
Send token with request
Create API Key

Generate tokens

Send token with request
Download once in App Store Connect
## Users and Access

Generating an API key allows you to configure, authenticate, and use one or more Apple services for that key. Keys don’t expire, but can’t be modified to access more services once created. Learn More.

**Active (2)**

<table>
<thead>
<tr>
<th>NAME</th>
<th>GENERATED BY</th>
<th>KEY ID</th>
<th>LAST USED</th>
<th>ACCESS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mobile Contractors</td>
<td>Cindy Cheung</td>
<td>2ZF2W6LYGK</td>
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<td>Developer</td>
</tr>
<tr>
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<td>App Manager, Finance</td>
</tr>
</tbody>
</table>

**Revoked (4)**

Revoked keys are displayed for 30 days.

<table>
<thead>
<tr>
<th>NAME</th>
<th>REVOKE BY</th>
<th>KEY ID</th>
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<tbody>
<tr>
<td>Legal</td>
<td>Stephanie Vidal</td>
<td>3RYUIYHSYH</td>
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<td>5SJBNTA9L8</td>
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</table>
### Users and Access

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**Issuer ID**
b067a60c–c60b–4430–a719–bd21a428c8ad

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<table>
<thead>
<tr>
<th>Issuer ID</th>
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<tbody>
<tr>
<td>b087a80f-eb0-443e-af7b-bd1a42c8eb6</td>
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Private Keys

Downloaded only once
Not stored by Apple
Managed by you
Do not expire
Create API Key
Generate tokens
Send token with request
<table>
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<tr>
<th>Field</th>
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<tbody>
<tr>
<td>JSON Web Token</td>
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<td>Private Key ID</td>
<td>Found in App Store Connect</td>
<td>This key</td>
</tr>
<tr>
<td>Expiration time</td>
<td>Timestamp of expiration</td>
<td>&lt;=20min</td>
</tr>
</tbody>
</table>
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<td>Expiration time</td>
<td>Timestamp of expiration</td>
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</tr>
<tr>
<td>Audience</td>
<td>“appstoreconnect-v1”</td>
<td>Constant</td>
</tr>
<tr>
<td>Field</td>
<td>Value</td>
<td>Usage</td>
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<tr>
<td>---------------------</td>
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</tr>
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<td>Audience</td>
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<td>Constant</td>
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<tr>
<td>Algorithm</td>
<td>“ES256”</td>
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token = JWT.encode(
{
    iss: ISSUER_ID,                  //found on API Keys tab
    exp: Time.now.to_i + 20 * 60,    //up to 20 minutes in the future
    aud: "appstoreconnect-v1"
},
private_key,
"ES256",
header_fields={
    kid: KEY_ID                    //found on API Keys tab
}
)
Create API Key
Generate tokens
Send token with request
> GET api.appstoreconnect.apple.com/v1/apps

Host: api.appstoreconnect.apple.com
User-Agent: curl/7.54.0
Accept: */*
Authorization: Bearer <token_value>
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Best Practices

Protect your private keys
Best Practices

Protect your private keys

Reuse tokens
Best Practices

- Protect your private keys
- Reuse tokens
- Use the links
Best Practices

- Protect your private keys
- Reuse tokens
- Use the links
- Check the documentation
App Store Connect API
Available this summer
More Information

https://developer.apple.com/wwdc18/303

<table>
<thead>
<tr>
<th>App Store and App Store Connect Lab</th>
<th>Technology Lab 2</th>
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<tbody>
<tr>
<td>App Store and App Store Connect Lab</td>
<td>Technology Lab 3</td>
<td>Friday, 1:00PM</td>
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