

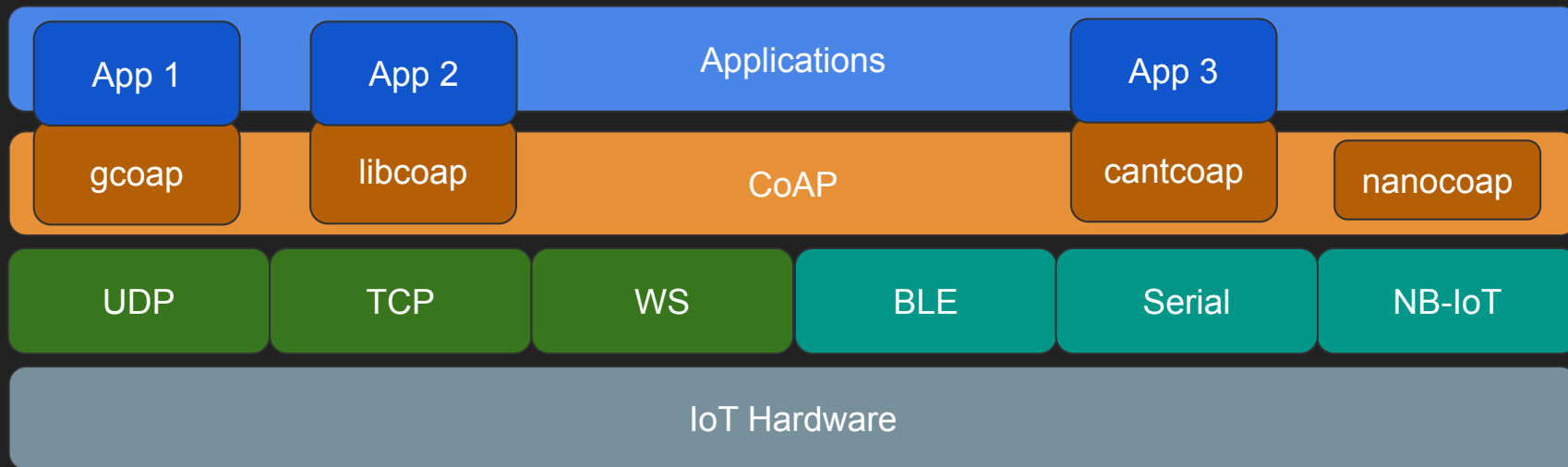
# High-level CoAP API for RIOT

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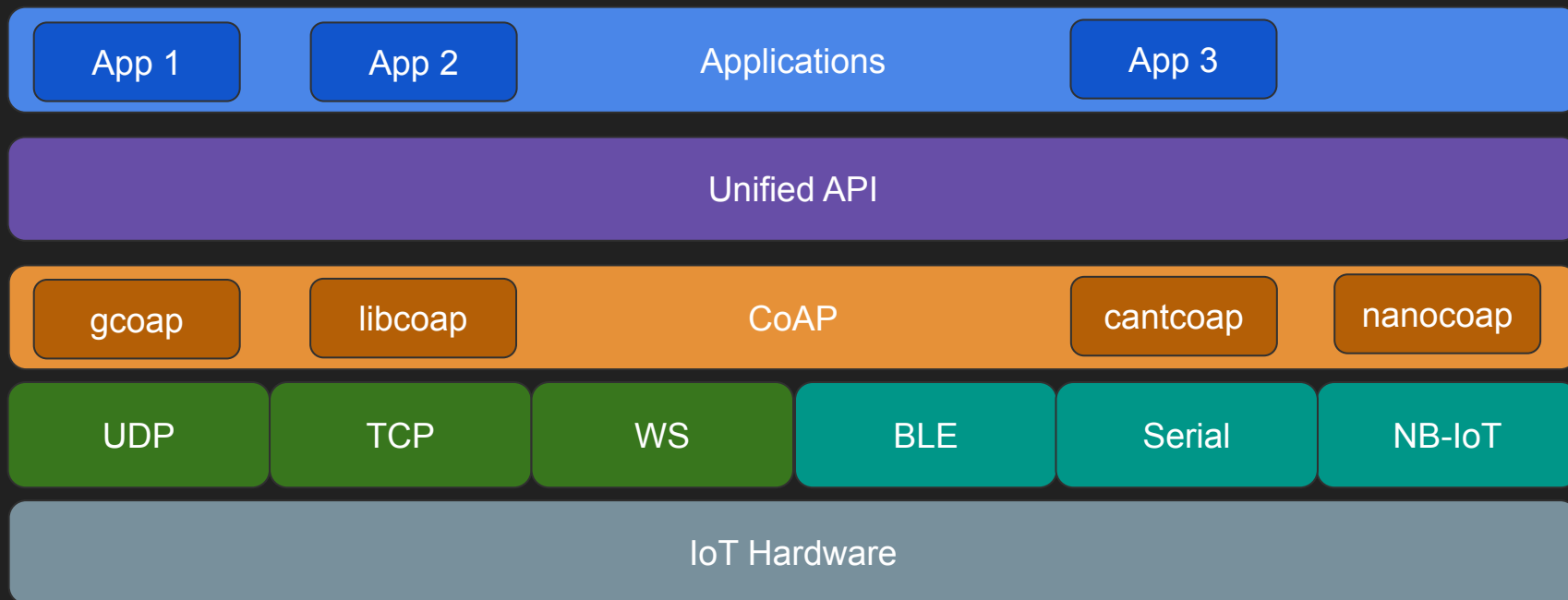
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# Common IoT Stack

Different software implementations & different transport protocols



# Unified API to ease programming and app deployment



# Server API

```
typedef struct {
    char* path;
    char allowed_methods;
    char allowed_transports;
    char* link_params;
    resource_handler_t handler;
    bool is_valid;
} coap_resource_t;

void coap_server_use_driver(coap_server_t* server, transport_t t, server_driver_t driver);
void coap_server_register_resource(coap_server_t* server, char* path, methods_selector_t methods,
                                   transports_selector_t transports, char* rt,
                                   resource_handler_t handler);
void coap_server_start(coap_server_t* server);
```

# Server Example

```
response_t* index_handler(request_t* request) {  
    printf(format: "Hello World\n");  
    return NULL;  
}
```

```
int main(int argc, char* argv[]) {  
    coap_server_t server;  
    coap_server_use_driver(&server, t: UDP, driver: gcoap_driver);  
    coap_server_register_resource(&server, path: "/", methods: GET | POST, transports: UDP | TCP,  
                                  rt: ";ct=0;rt=\"count\";obs", handler: &index_handler);  
    coap_server_start(&server);  
  
    return 0;  
}
```

To be discussed



# Hackathon plan and **what we got done**

- Design a high-level API
  - Server API
  - Client API
  - Details hidden from application code
  - Flexible usage of CoAP implementations
  - Flexible usage of transport protocols
- Implement a prototype for the RIOT OS



# Contributors and Repository

## Team members

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GitHub Repo:

<https://github.com/triess/CoAPI>



# Client Example

```
int main(int argc, char* argv[]) {  
    coap_request_t request;  
    coap_request_init(&request, uri: "coap+tcp://192.168.178.47/temp", m: PUT, gcoap_driver);  
    coap_request_add_options(&request, opt: OPTN_CONTENT_FORMAT, val: "text/plain");  
    coap_request_set_payload(&request, payload: "24°C");  
    coap_response_t response = coap_request_send(&request);  
  
    printf(format: "Server Response: %s\n", response.payload);  
  
    return 0;  
}
```



# Example call

