



ioBroker

Home and Building
Automation

Tobias Fischer
Fabian Hofer
Stefan Penzinger
Michael Zauner

Try Pitch

The screenshot shows the ioBroker interface with a dark theme. At the top, there's a header with icons for notifications (2), search, settings, and user profile. Below the header, there are tabs for 'C' (Configuration) and 'G' (Global). The main area displays a list of adapters:

- Alexa2 (Amazon Echo)**: Rating 5 stars. Status: Installed instances: 1, Available version: 3.26.5, Installed version: 3.26.5. Actions: Cloud download (green), Network (green).
- Anel Hut**: Status: Available version: [partially visible]. Actions: Cloud upload (orange), Network (orange).
- bshb**: Rating 5 stars. Status: Available version: 0.3.0. Actions: Cloud download (green).
- Broadlink2**: Status: Available version: [partially visible]. Actions: Cloud upload (orange).

01. Geschichte
02. Funktionsweise
03. Setup
04. Komponenten
05. Projekte
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07. Live Demo

ioBroker

- Gründung 2014, Deutschland
 - basierend auf dem Home Automation Projekt **CCU.IO**
- Ziel: "*unified, open, and flexible platform for home automation and IoT*"
- open-source seit Anfang an
- Programmiert in JavaScript
 - *Node.js*
- Aktueller Release (23.08.2024): **v6.0.1**
- Docker Image Downloads: **10 Mio. +**



Funktionsweise

Adapter Architektur

- Läuft auf Windows, Linux, OSX, Raspberry Pi, etc.
- Zentrale Plattform für IoT und Smart Home
- Modularer Aufbau
- Multi-Host Unterstützung
- Adapter und Instanzen als zentrale Bausteine
 - Geräte, Protokolle oder Dienste
 - "Brücke" zwischen ioBroker und einer Technologie
- Aktuelle Adapter (Stand Jänner 2025): **651**



Funktionsweise

Zentraler Steuerungspunkt

- *js-controller*
- *Kommunikation & Starten von Instanzen*
- *Single Point of Failure*

README MIT license

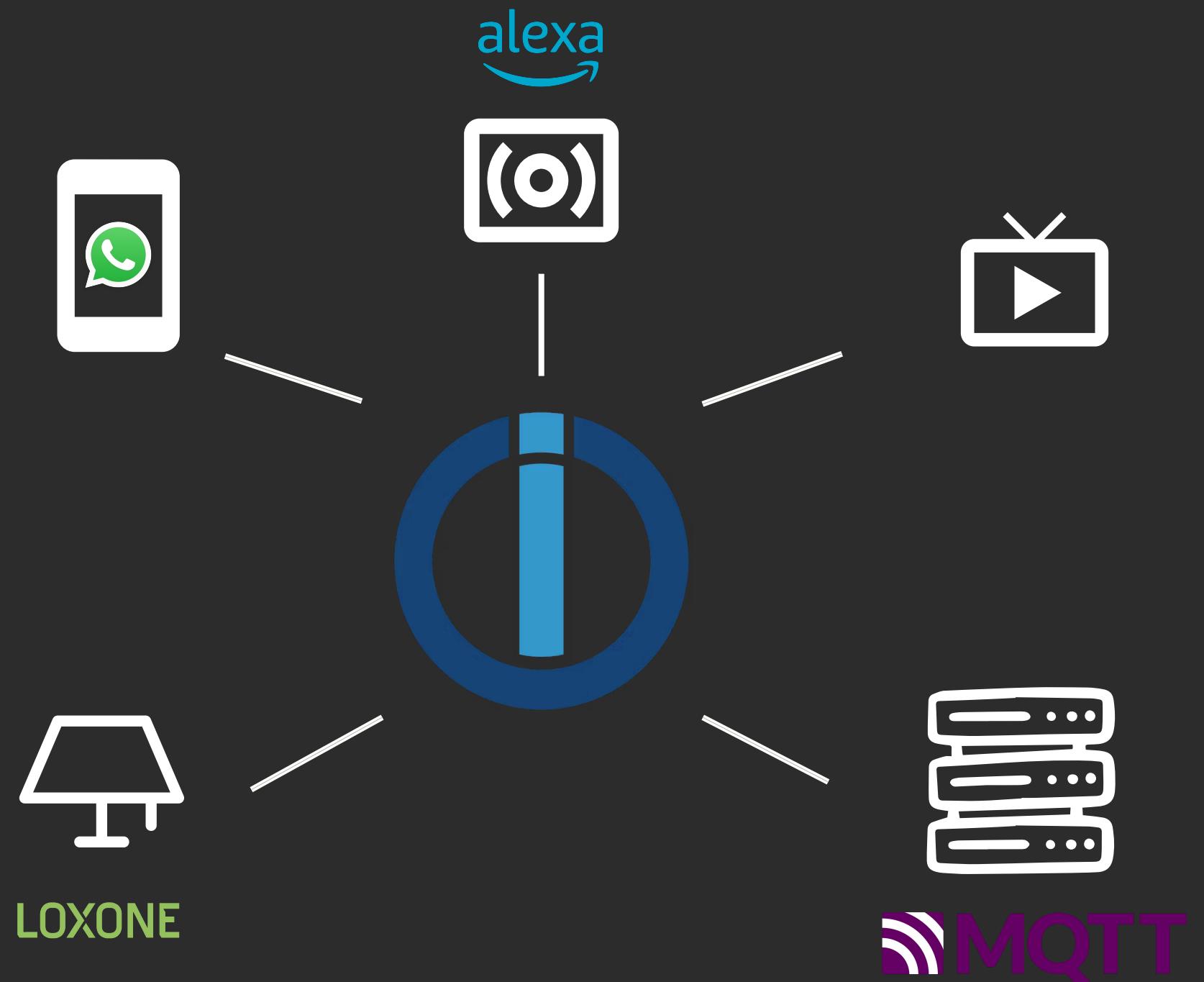
iBroker
Automate your life

ioBroker.js-controller

installed 73.7k stable v7.0.6 npm v7.0.6

CI passing downloads 59k/month

The ioBroker.js-controller is the heart of any ioBroker installation. The controller is owning the central configuration of the ioBroker installation and controls and monitors all adapter processes for the current host.

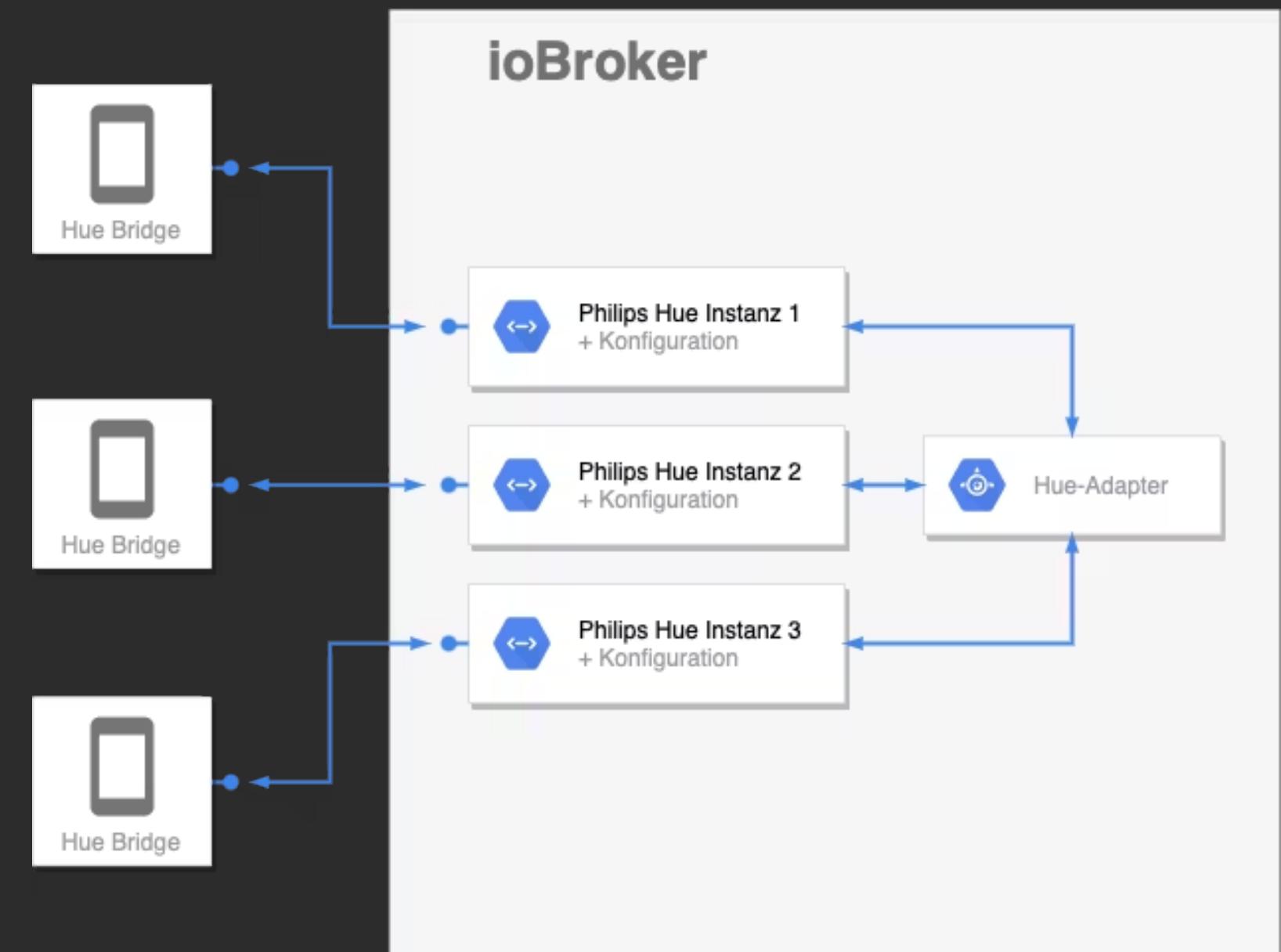


Funktionsweise

Zentraler Steuerungspunkt

- *js-controller*
- *Kommunikation & Starten von Instanzen*
- *Single Point of Failure*

The screenshot shows the npm package page for 'ioBroker.js-controller'. It includes the package logo, name, description ('Automate your life'), version information (installed 73.7k, stable v7.0.6, npm v7.0.6), CI status (CI passing), and download statistics (downloads 59k/month). A note at the bottom states: 'The ioBroker.js-controller is the heart of any ioBroker installation. The controller is owning the central configuration of the ioBroker installation and controls and monitors all adapter processes for the current host.'



Funktionsweise

Visualisierung

- Über Adapter
- VIS / VIS-2
 - Grafische Oberfläche, um Dashboards zu bauen
 - Läuft direkt im Browser (localhost:8082/vis/index.html)
 - Nur eine Instanz
 - Widgets über ObjectID erzeugen
- CSS / HTML Code integration



vis-2

Visualisierung Next Generation
Erweiterte GUI für ioBroker

Autoren: bluefox
Stable: 2.9.64
Installationen: 13773
Github stars: 6
Week downloads: 831

[LESEN](#) [GITHUB](#) [INFO](#)

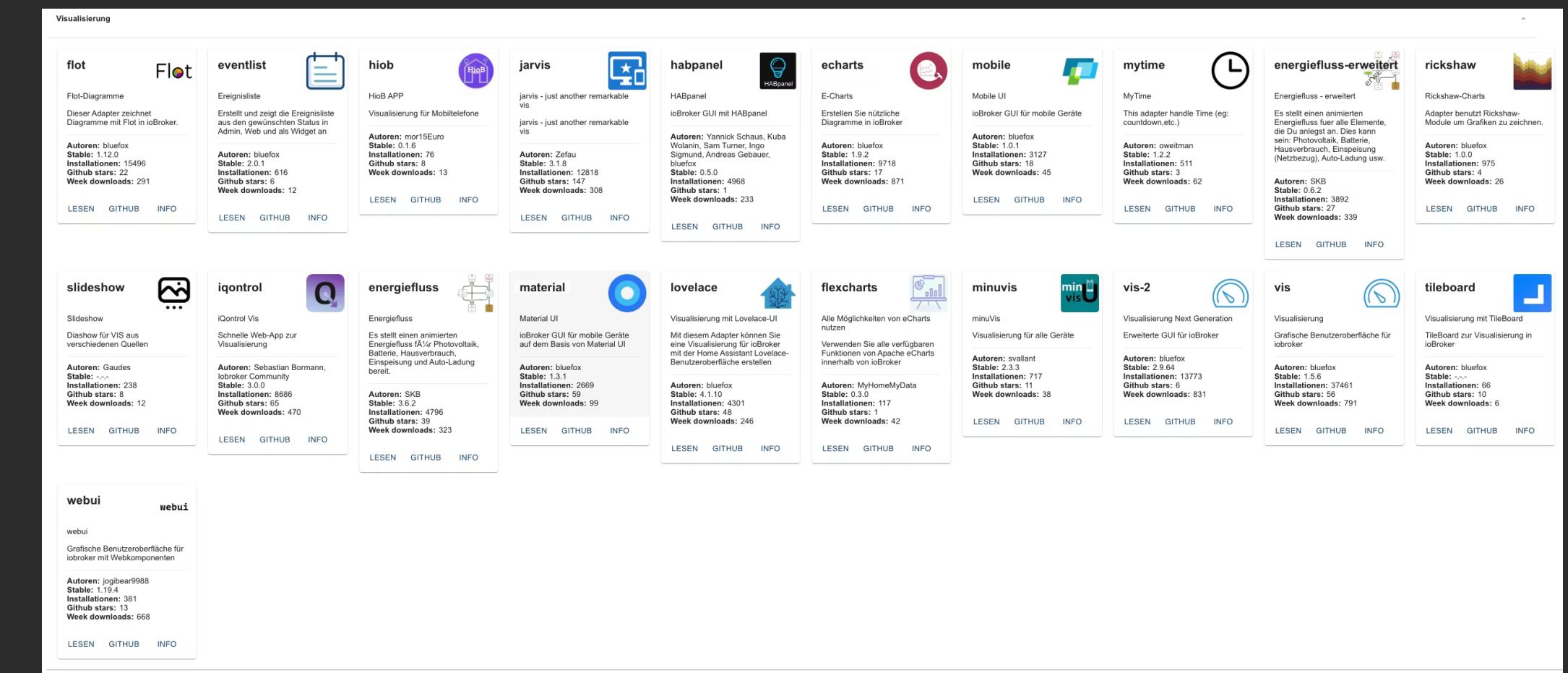


vis

Visualisierung
Grafische Benutzeroberfläche für
iobroker

Autoren: bluefox
Stable: 1.5.6
Installationen: 37461
Github stars: 56
Week downloads: 791

[LESEN](#) [GITHUB](#) [INFO](#)



The screenshot shows a grid of adapter cards from the Adapter Manager. Each card contains the adapter name, icon, brief description, author information, stable version, installation count, GitHub star count, week download count, and links to 'LESEN' (Read), 'GITHUB', and 'INFO'.

Adapter	Description	Author	Stable	Installations	Github stars	Week downloads	Links
vis-2	Visualisierung Next Generation Erweiterte GUI für ioBroker	bluefox	2.9.64	13773	6	831	LESEN GITHUB INFO
vis	Visualisierung Grafische Benutzeroberfläche für iobroker	bluefox	1.5.6	37461	56	791	LESEN GITHUB INFO
minuVis	Visualisierung für alle Geräte	svalant	2.3.3	717	6	38	LESEN GITHUB INFO
vis-2	Visualisierung Next Generation Erweiterte GUI für ioBroker	bluefox	2.9.64	13773	6	831	LESEN GITHUB INFO
vis	Visualisierung Grafische Benutzeroberfläche für iobroker	bluefox	1.5.6	37461	56	791	LESEN GITHUB INFO
tileboard	Visualisierung mit TileBoard	bluefox	5.6	66	10	6	LESEN GITHUB INFO
material	Material UI	bluefox	4.1.10	4301	48	42	LESEN GITHUB INFO
lovelace	Visualisierung mit Lovelace-UI	bluefox	0.3.0	117	1	42	LESEN GITHUB INFO
flexcharts	Alle Möglichkeiten von eCharts nutzen	MyHomeMyData	0.3.0	117	1	42	LESEN GITHUB INFO
minuVis	Visualisierung für alle Geräte	bluefox	0.3.0	117	1	42	LESEN GITHUB INFO
energiefluss-erweitert	Energiefluss - erweitert	bluefox	1.0.0	3892	27	339	LESEN GITHUB INFO
rickshaw	Rickshaw-Charts	bluefox	1.0.0	975	4	26	LESEN GITHUB INFO
jarvis	jarvis - just another remarkable vis	bluefox	0.1.6	616	6	12	LESEN GITHUB INFO
habpanel	ioBroker GUI mit HABPanel	bluefox	0.5.0	4968	1	233	LESEN GITHUB INFO
echarts	E-Charts	bluefox	1.0.1	978	17	45	LESEN GITHUB INFO
mobile	Mobile UI	bluefox	1.0.1	3127	18	62	LESEN GITHUB INFO
mytime	This adapter handle Time (e.g. countdown,etc.)	oweltman	1.2.2	511	3	62	LESEN GITHUB INFO
eventlist	Eventliste	bluefox	2.0.1	76	6	12	LESEN GITHUB INFO
hiob	HiOB APP	bluefox	2.0.1	616	6	12	LESEN GITHUB INFO
slideshow	Slideshow	Gaudes Software Community	3.0.0	8686	65	470	LESEN GITHUB INFO
iqontrol	iQontrol Vis	Sebastian Bornmann	3.0.0	4796	59	323	LESEN GITHUB INFO
energiefluss	Energiefluss	SKB	3.6.2	2669	39	99	LESEN GITHUB INFO
material	Material UI	bluefox	4.1.10	4301	48	246	LESEN GITHUB INFO
lovelace	Visualisierung mit Lovelace-UI	bluefox	0.3.0	117	1	42	LESEN GITHUB INFO
flexcharts	Alle Möglichkeiten von eCharts nutzen	MyHomeMyData	0.3.0	117	1	42	LESEN GITHUB INFO
minuVis	Visualisierung für alle Geräte	bluefox	0.3.0	117	1	42	LESEN GITHUB INFO
vis-2	Visualisierung Next Generation Erweiterte GUI für ioBroker	bluefox	2.9.64	13773	6	831	LESEN GITHUB INFO
vis	Visualisierung	bluefox	1.5.6	37461	56	791	LESEN GITHUB INFO
tileboard	Visualisierung mit TileBoard	bluefox	5.6	66	10	6	LESEN GITHUB INFO
webui	grafische Benutzeroberfläche für iobroker mit Webkomponenten	jogibear9988	1.19.4	381	13	668	LESEN GITHUB INFO

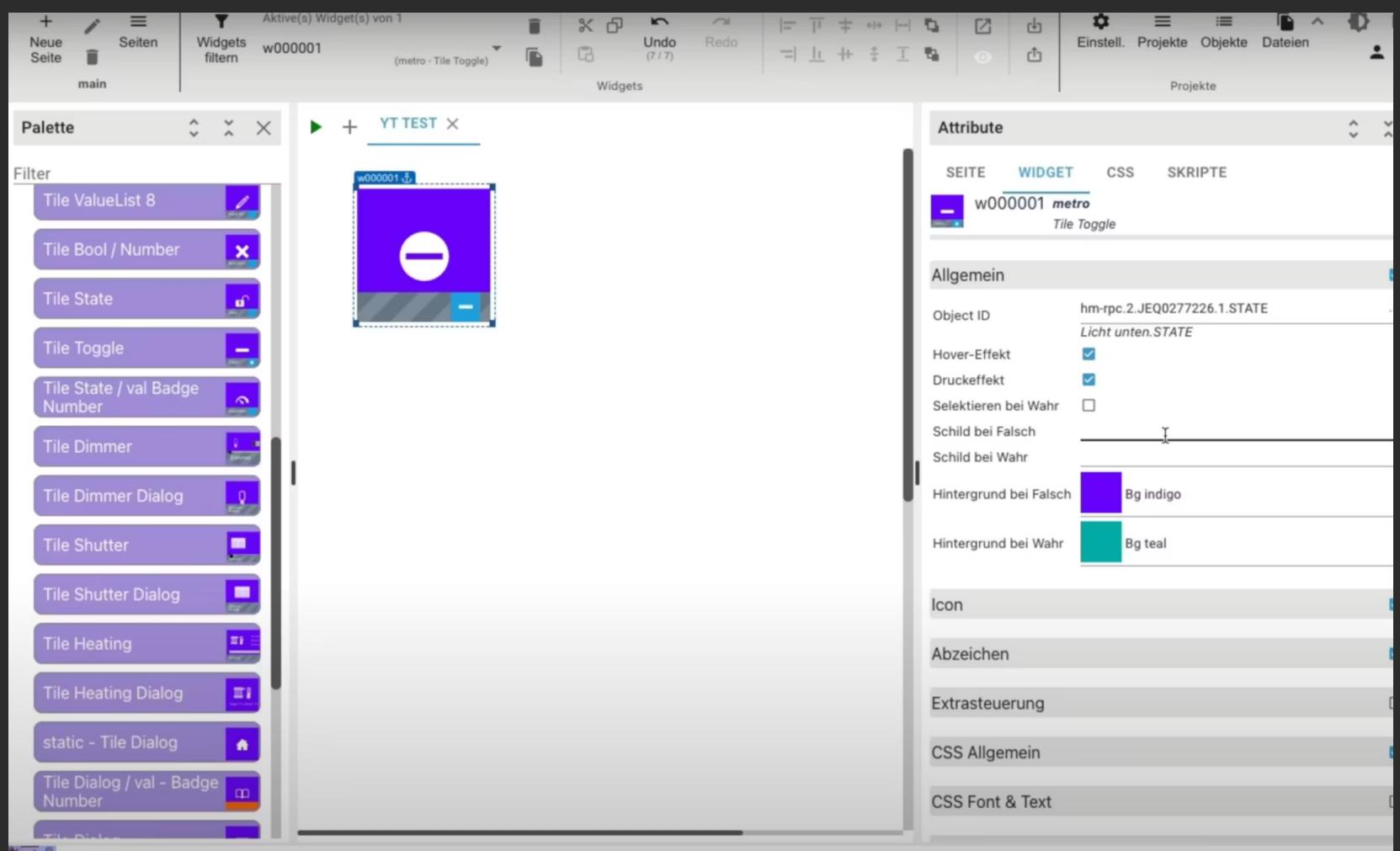
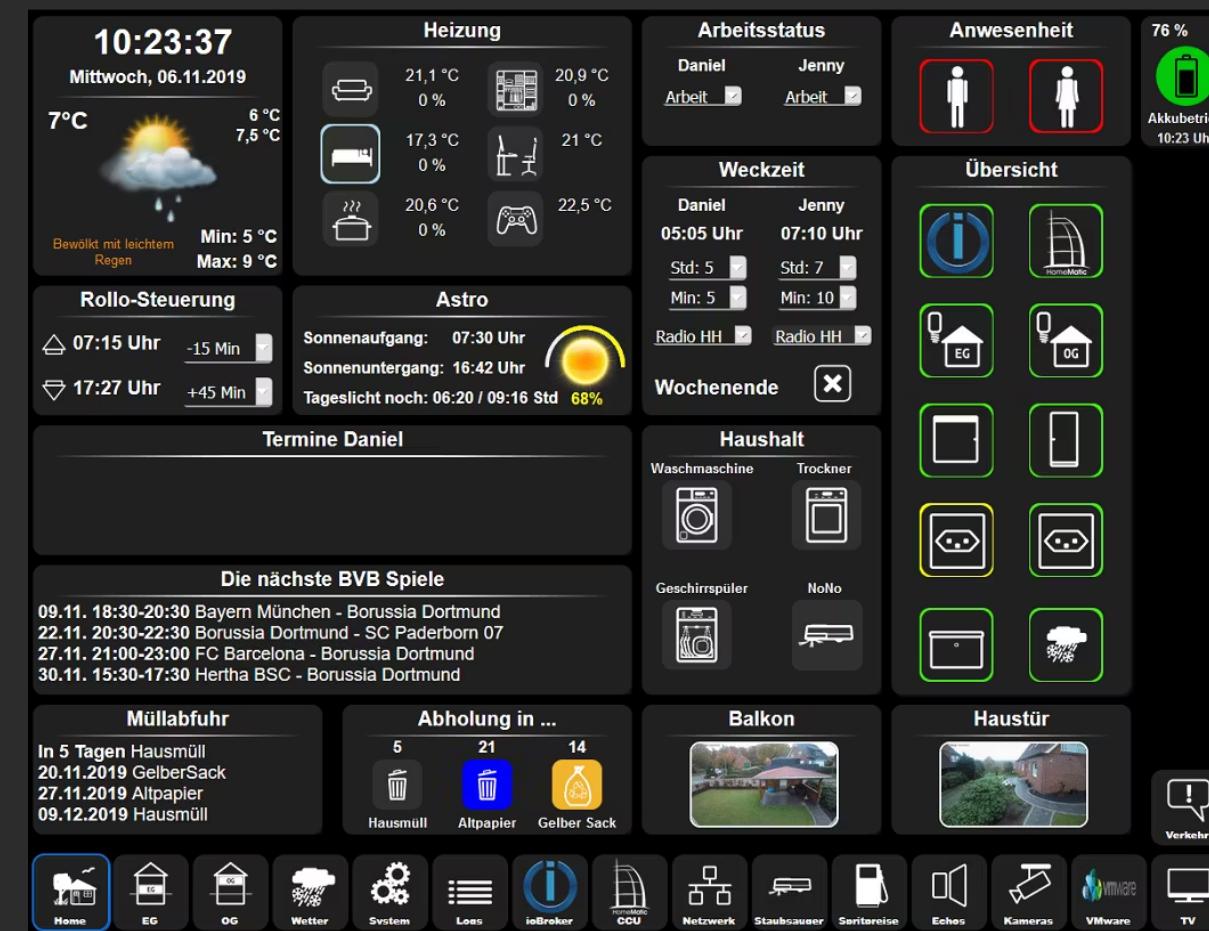
Funktionsweise

Visualisierung

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Try Pitch



Setup

Installation



- Install script
- **Docker**

```
| ~ docker run -p 8081:8081 --name iobroker -h iobroker -v iobroker_data:/opt/iobroker buanet/iobroker
```

```
| ~ docker start iobroker
```

```
→ ~ docker ps
CONTAINER ID IMAGE COMMAND CREATED STATUS PORTS NAMES
4952e6fd0580 buanet/iobroker "/bin/bash -c /opt/s..." 2 weeks ago Up About a minute (healthy) 0.0.0.0:8081→8081/tcp, :::8081→8081/tcp iobroker
```

Adapter

- Herzstück von ioBroker
- Erlaubt Anbindung an verschiedene Services und Devices über Software
 - Daten aus dem Internet abrufen
 - Mit Hardware kommunizieren
 - Backups erstellen
 - GUI bereitstellen
- Derzeit ca. 650 Adapter zur Verfügung
- Von einem Adapter können dann mehrere Instanzen gestartet werden

Komponenten

Adapter

The screenshot shows the ioBroker interface at localhost:8081/#tab-adapters. The left sidebar has tabs for Overview, Adapters (selected), Instances, Objects, Enums, Logs, Users, Scripts, Hosts, Files, and Backup. The main area displays a grid of adapter cards. A filter bar at the top allows filtering by name, IOT SYSTEMS, or TITLE. A summary in the top right corner indicates 552 total adapters, 6 installed, and 31 updated last month.

Adapter	Description	Available Version	Installed Version	Notes
alexa2	Alexa2 (Amazon Echo)	3.26.5	3.26.5	Cloud icon with green arrow down, WiFi icon
anelhut	Anel Hut	1.0.15		Cloud icon with orange arrow up, WiFi icon
awtrix-light	Awtrix 3 (Awtrix Light)	1.4.1		Cloud icon with orange arrow up, WiFi icon
ham-wemo	Belkin Wemo plugin	3.0.2		Cloud icon with green arrow down
blebox	Blebox	2.1.0		Cloud icon with orange arrow up
bshb	Bosch Smart Home Bridge	0.3.0		Cloud icon with green arrow down
broadlink2	Broadlink2	2.3.0		Cloud icon with orange arrow up
cul	CUL/culfw	2.2.0		Cloud icon with green arrow down, WiFi icon
digitalstrom	Digitalstrom	2.3.0		Cloud icon with orange arrow up, WiFi icon
doorbird	DoorBird	2.0.0		Cloud icon with green arrow down

Installiert über NPM (Code auf GitHub)

<https://github.com/ioBroker/create-adapter>

Komponenten

Instance

- Adapter stellt Software zur Verfügung
- Instanzen enthalten die Konfiguration
 - Bspw. IP der Phillips Hue Bridge
- Meist nur eine Instanz pro Adapter
 - Einige Adapter verbieten das Erstellen mehrerer Instanzen

Komponenten

Instance

The screenshot shows the iobroker interface at `localhost:8081/#tab-instances`. The left sidebar has tabs for Overview, Adapters, Instances (which is selected), Objects, Enums, Logs, Users, and Scripts. The main area displays a table of running instances:

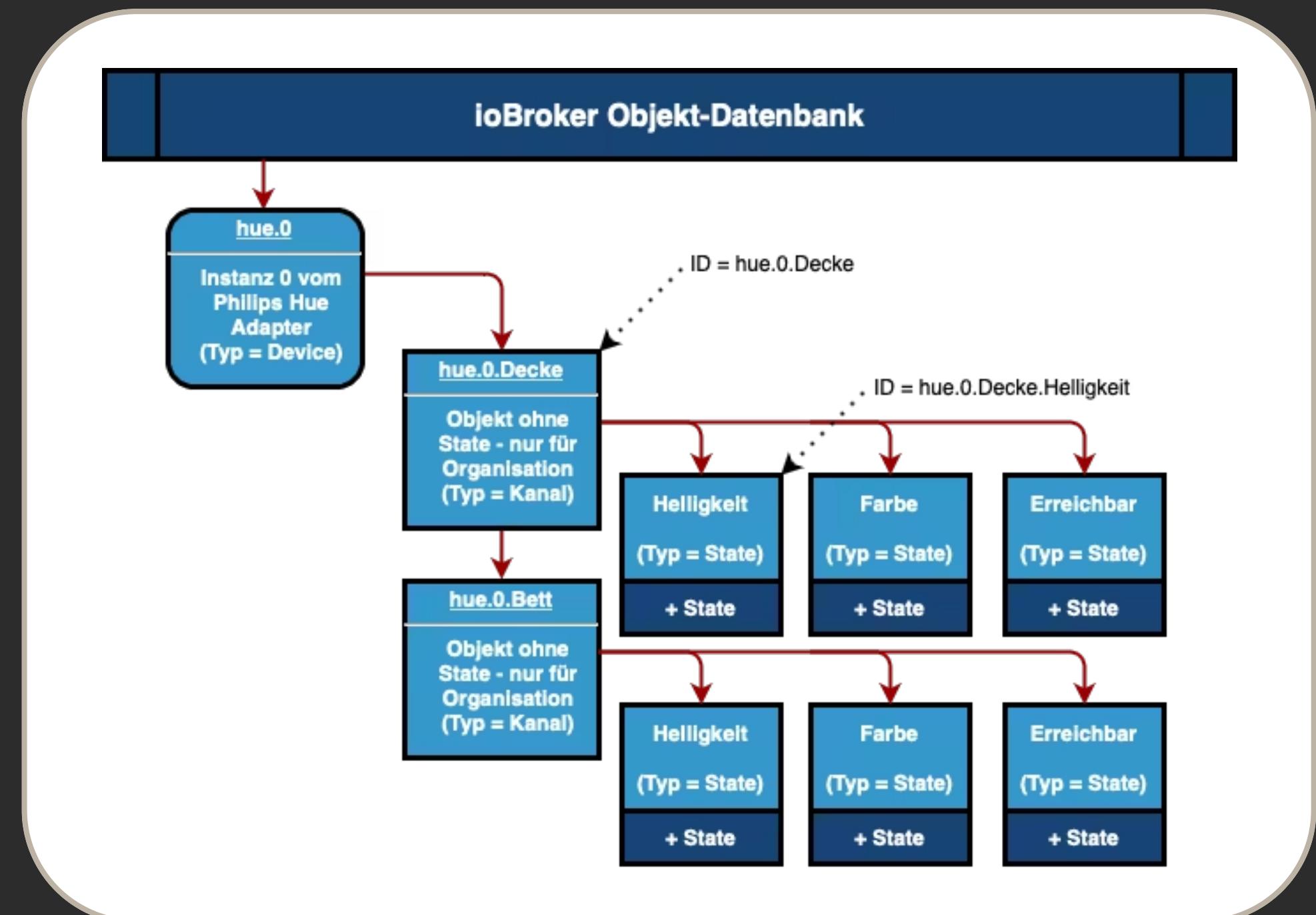
Icon	Name	Status	Type	Memory Usage	Network Status
Admin icon	admin.0	Running	Admin	143.21 MB	Green
Alexa icon	alexa2.0	Running	Alexa2 (Amazon Echo)	81.54 MB	Green
Wattmeter icon	awattar.0	Running	aWATTar	N/A	Yellow
Backup icon	backitup.0	Running	BackItUp	77.48 MB	Green
Discovery icon	discovery.0	Running	Discovery devices	72.18 MB	Green
JavaScript icon	javascript.0	Running	Script Engine	134.53 MB	Green

Disk free: 44%, Total RAM usage: 711 Mb / Free: 92% = 29266 Mb [Host: iobroker - 6 processes]

Komponenten

Object

- Systemkonfig, Nutzer, Gruppen, Adapter, usw.
- Verschiedene Typen
 - device, folder, channel or state
- Werden als Hierarchie abgebildet
- Nicht jedes Objekt hat einen Zustand, aber jeder Zustand ein zugehöriges Objekt!



Komponenten

Object

The screenshot shows the Home Assistant interface with the URL `localhost:8081/#tab-objects`. The sidebar on the left is titled "Objects" and is highlighted in blue. The main area displays a table of objects with the following columns: ID, Name, Type, Role, Room, Function, and Value. The table lists several objects, including `0_userdata`, `admin`, `alexa2`, `alias`, `awattar`, `0`, and `prices`. The `prices` folder is expanded, showing its contents: `bruttoPriceKwh`, `end`, `endDate`, `nettoPriceKwh`, `start`, `startDate`, and `totalPriceKwh`. The `bruttoPriceKwh` entry has a detailed description: "Preis pro KWh (incl. MwSt.)", "Gültigkeitsende (Uhrzeit)", "Gültigkeitsende (Datum)", "Preis pro KWh (excl. MwSt.)", "Gültigkeitsbeginn (Uhrzeit)", "Gültigkeitsbeginn (Datum)", and "Gesamtpreis pro KWh (incl. MwSt.)". The code editor at the bottom contains the following command:

```
getState("awattar.0.prices.0.bruttoPriceKwh");
```

Komponenten

Enum

The screenshot shows the OpenThings v7.1.5 interface with the 'Enums' tab selected. The left sidebar includes links for Overview, Adapters, Instances, Objects, Enums (selected), Logs, Users, and Scripts. The top navigation bar shows the URL `localhost:8081/#tab-enums`. The main area displays two enum entries: 'Bedroom' and 'Kitchen'. A third entry, 'Shopping List', is listed but has a red 'X' next to it, indicating it is deleted or inactive. On the right, a table lists various system components:

ID	Type	Role	Room
0_userdata	{}		
admin	⚙️		
alexa2	💡		
awattar	⌚		
backtup	⌚		
discovery	🔍		
javascript	(JS)		
mqtt	MQTT		
script	scriptId		

Projekt

#1 "Wake up routine"

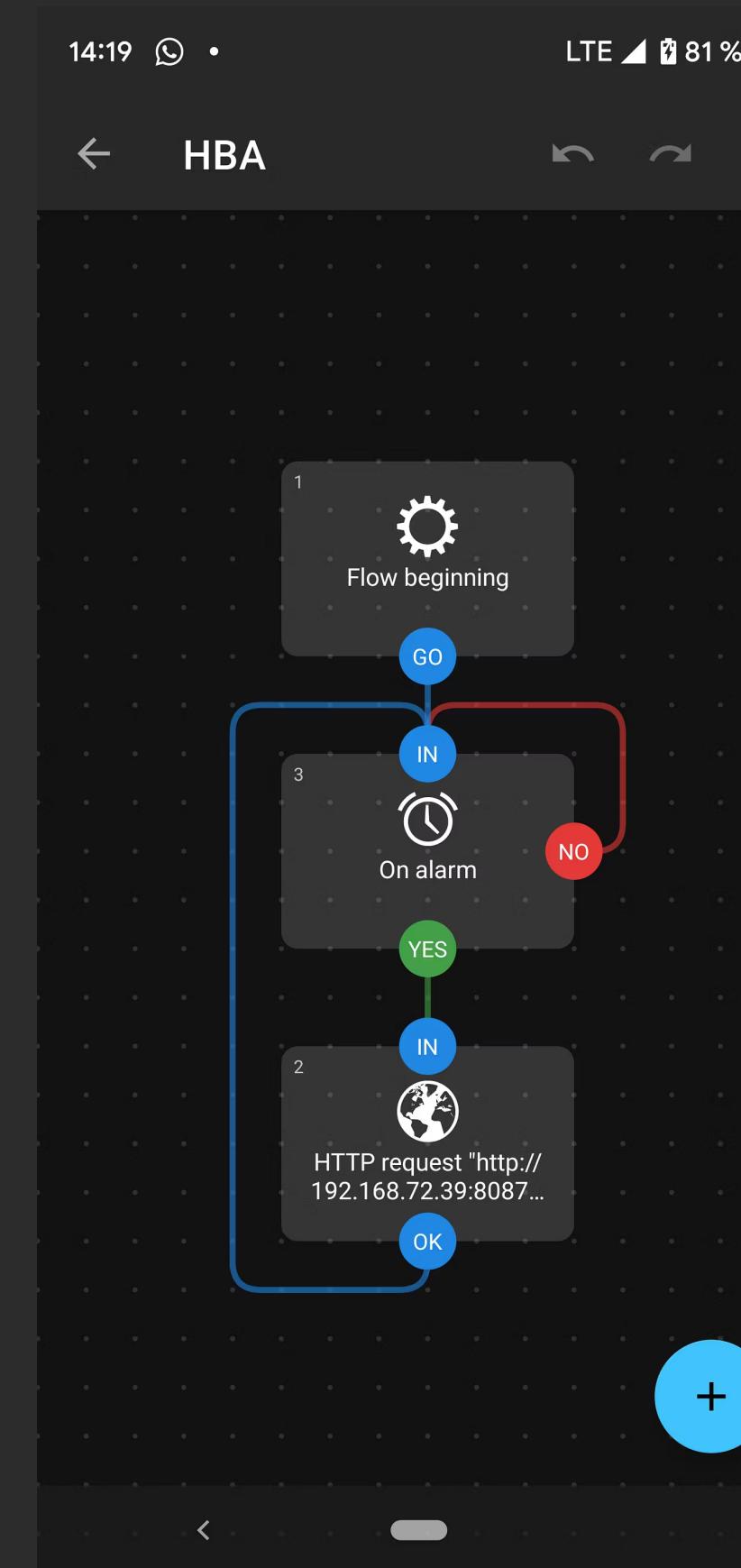
- "Wenn der Wecker läutet, sollte das Licht langsam heller werden und ein cooler Song sollte gespielt werden"



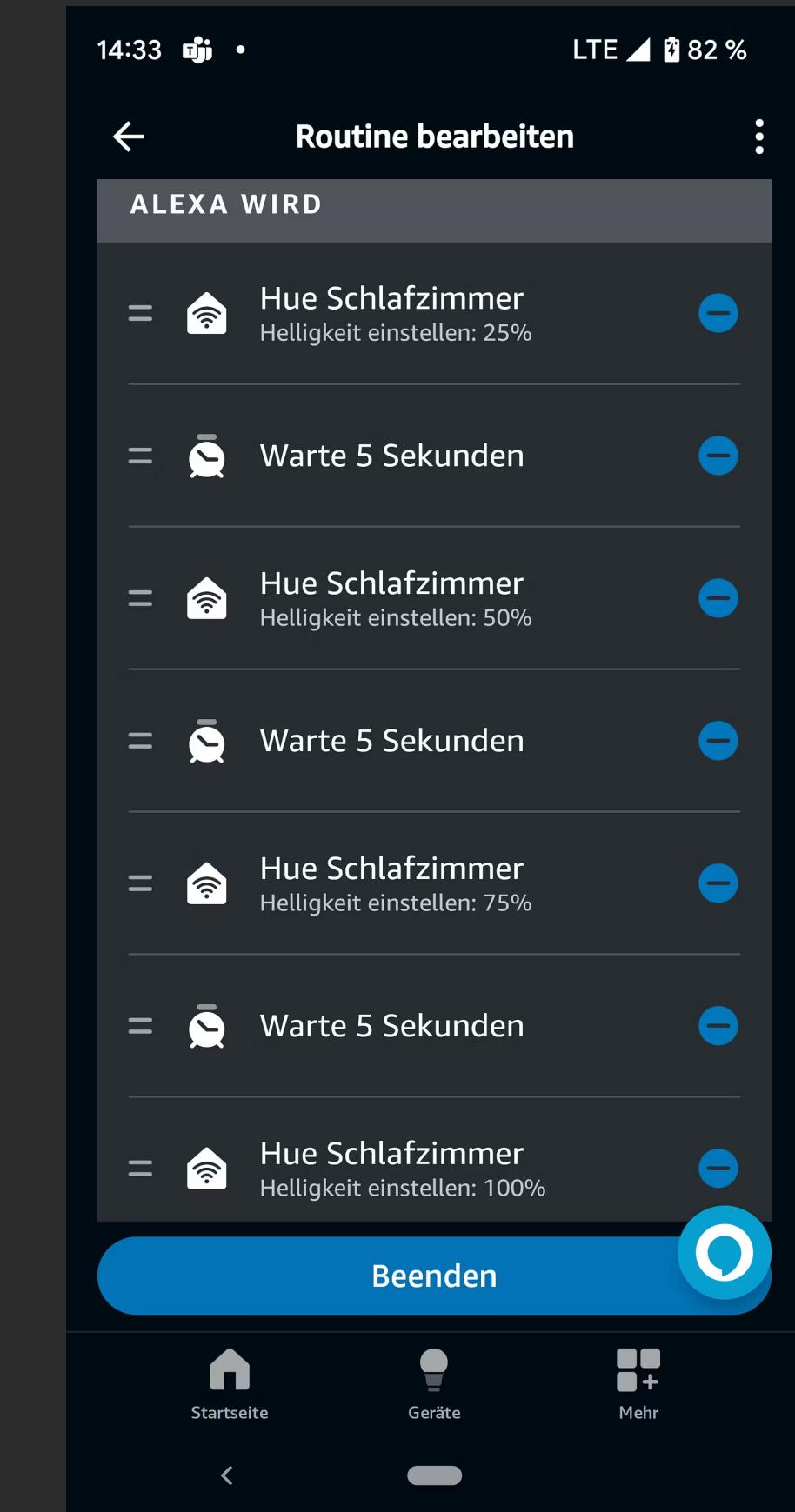
Projekt

#1 Mobile

App: Automate



App: Alexa



Projekt

#1 ioBroker script

```
const alexaDevice = "alexa2.0.Echo-Devices.G0922H0843.....";  
  
const http = require('http');  
  
const server = http.createServer((req, res) => {  
    if (req.method === 'GET' && req.url === '/wake-up-alexa') {  
  
        // execute wake up routine  
        setState(` ${alexaDevice}.Routines.573445ec-c826-47e6-9513-cb6fe9639652` , true, () => {  
            setTimeout(() => {  
  
                // play song  
                setState(` ${alexaDevice}.Commands.textCommand` , "Play House of the rising sun on Spotify");  
            }, 12000);  
        });  
    }  
});  
  
server.listen(8087, () => {  
    console.log('HTTP server running on port 8087');  
});
```

Projekt

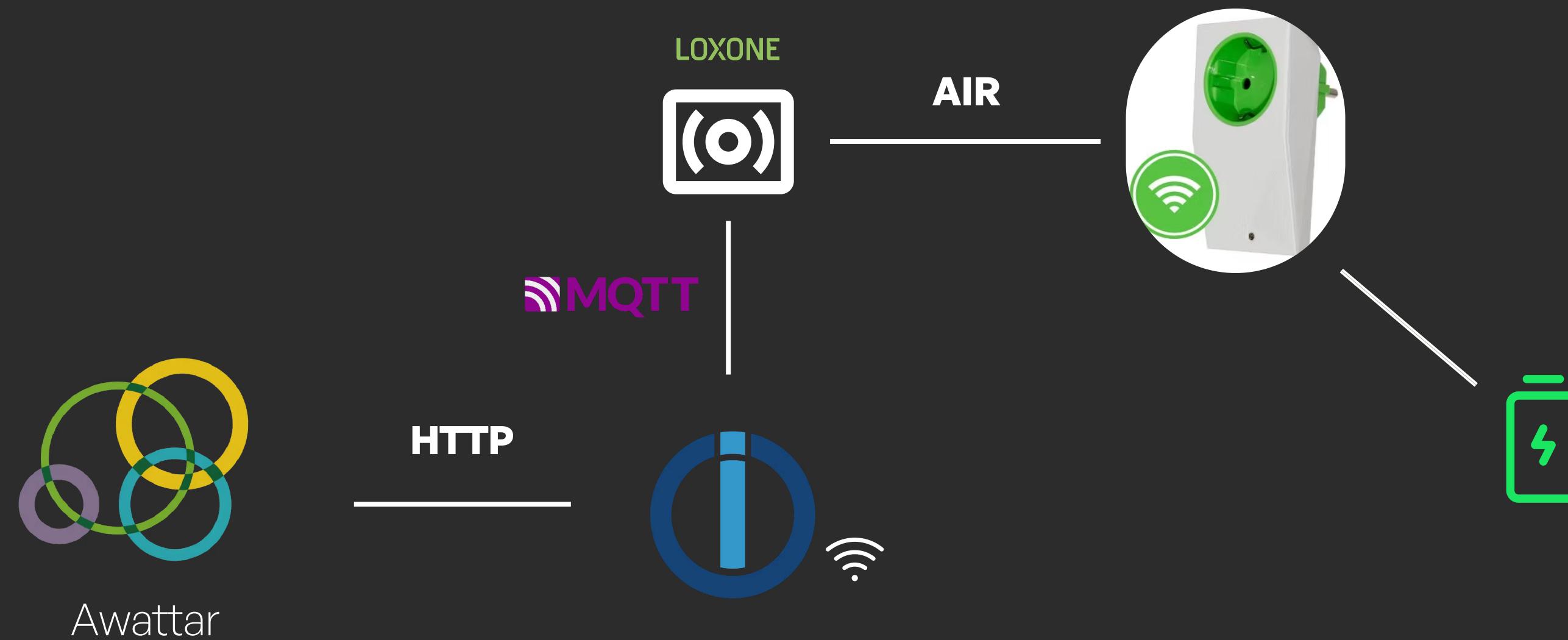
#1 Demo



Projekt

#2 "Smart Charging"

- *"Ich möchte meine Powerbank nur zu den günstigsten Energiepreisen aufladen"*



Projekt

#2 Loxone Config

The screenshot shows the Loxone Config software interface. On the left, there is a configuration panel for an 'iobroker' object. The 'General' tab shows the name 'iobroker' and object type 'Mqtt'. The 'Settings' tab shows the broker address as 'broker.hivemq.com', port as '1883', and protocol version as 'MQTT v5'. The 'Display Diagnostic Inputs' checkbox is checked. The 'Monitor service' checkbox is also checked. On the right, the main workspace displays a navigation tree and a rule editor. The navigation tree includes categories like 'Unbenannt', 'Räume', 'Kategorien', 'Icons', 'Users and Permissions', 'Managed Tablets', 'Constants', 'Memory Flags', 'System Variables', 'Operating Modes', 'Operating Times', 'Time Functions', 'Remote Controls', 'Push Notifications: Registered devices', 'Wetterserver', 'Audio', 'Trusts', 'Loxone Miniserver (~2% Utilization)', 'Virtual Inputs', 'Virtual Outputs', 'Intercom', 'Network Periphery', 'Netzwerk Interkommunikation', and 'iobroker (1/16 Publish, 1/16 Subscription)'. Under 'iobroker', there are sub-options for 'Onlinestatus (Sicherheit)', 'Subscription (TI)', and 'Publish (TO)'. In the bottom right, a rule is shown: 'Subscription TI' → 'Q1' → 'Smart'.

Projekt

#2 ioBroker script

```
// priceData = awattar price data
const sortedByCheapest = [...priceData].sort((a, b) => a.price - b.price);

// Get the 3 cheapest hours
const cheapestHours = sortedByCheapest.slice(0, 3).map(h => h.hour);
console.log(`Cheapest Hours: ${cheapestHours}`);

// Get the current hour
const currentHour = new Date().getHours();

const isCheapest = cheapestHours.includes(currentHour);

// 1 = power on, 0 = power off
const mqttValue = isCheapest ? 1 : 0;

sendTo('mqtt.0', 'sendMessage2Client', { topic: `${MQTT_BROKER_TOPIC}`, message: `${mqttValue}`, retain: true });
console.log(`MQTT message sent: ${mqttValue} for hour ${currentHour}`);
```

javascript.0	11:36:23.460	info	script.js.Loxone_Smart_Plug: Cheapest Hours: 23,3,4
javascript.0	11:36:23.460	info	script.js.Loxone_Smart_Plug: MQTT message sent: 0 for hour 11

Projekt

#2 Demo



11 Uhr - Aus

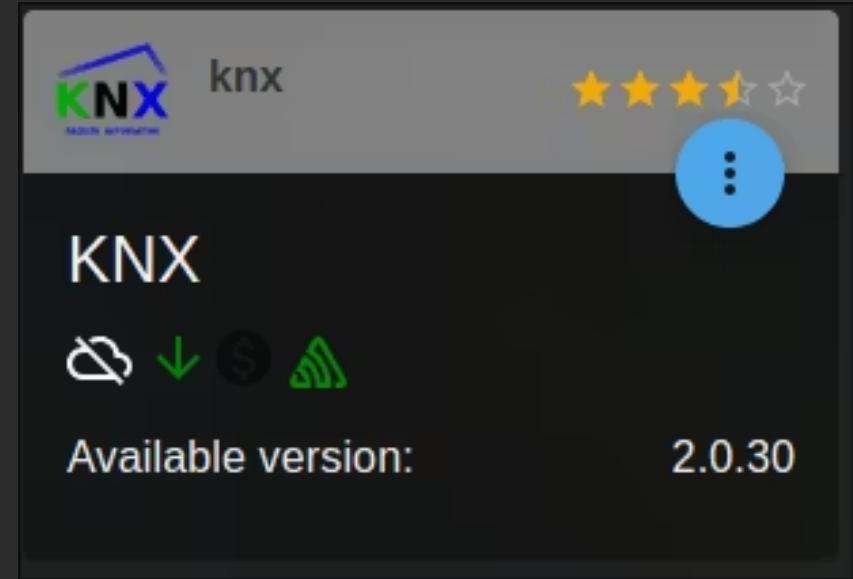


23 Uhr - Ein

KNX-Integration

ioBroker <-> KNX

- Komponenten
 - KNX Adapter
 - KNX/IP Interface oder Router
- Physikalische Adressen
 - manuell eingeben (Objects)
 - KNX project file importieren



A screenshot of the ioBroker configuration interface. On the left is a sidebar with icons for Overview, Adapters (selected), Instances, Objects, Enums, Logs (with 3 notifications), Users, Scripts, Hosts (with 1 notification), Files, and Backup. The main area shows "Instance settings: knx.0 v2.0.30" with tabs for CONFIGURATION and GA-TOOLS. Under CONFIGURATION, it shows "KNX Gateway Settings" with fields for KNX Gateway IP (127.0.0.1), KNX Gateway Port (3671), and physical KNX address (1.1.0). Below that is a section for "upload KNX project file" with a checked checkbox for "only import new datapoints" and a placeholder text "DRAG 'N' DROP KNXPROJ FILE HERE, OR CLICK TO".



Live Demo

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Try Pitch

The screenshot shows a dark-themed web application interface with a header containing icons for notifications (2), search, settings, and user profile. The main content area displays a grid of adapter cards:

- Alexa2 (Amazon Echo)**:
Rating: ★★★★☆
Cloud download icon (green)
Installed instances: 1
Available version: 3.26.5
Installed version: 3.26.5
- Anel Hut**:
Cloud upload icon (orange)
Available version:
- bshb**:
Rating: ★★★★★
Cloud download icon (green)
Bosch Smart Home Bridge
Available version: 0.3.0
- Broadlink2**:
Cloud upload icon (orange)
Available version:



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