

PENGGUNAAN RADIUS PADA USER MANAJEMEN HOTSPOT TERINTEGRASI DENGAN SISTEM INFORMASI AKADEMIK

Mikrotik User Meeting

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PROFIL

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MASALAH HOTSPOT

- 1 akun dipakai 50-200 user sehingga ada peluang orang lain bisa akses sekalipun bukan staf atau mahasiswa.
- Ada peluang untuk melihat password user dengan fitur hide/show password di winbox mikrotik.

MASALAH IMPLEMENTASI 1 AKUN 1 USER

- Membutuhkan waktu lama untuk membuat akun seluruh staf dan mahasiswa.
- Bertambah akun (untuk login ke internet) yang perlu diingat oleh staf dan mahasiswa.

SOLUSI V1

- Memanfaatkan API dari mikrotik untuk remote user hotspot
- Membuat 1 akun 1 user
- Mengintegrasikan dengan sistem informasi akademik (Ex: Sistem Dosen)

V1: low budget, implementasi cepat

SEBELUM IMPLEMENTASI

- Cek kemampuan hardware mikrotik anda
- Cek level lisensi mikrotik anda

Level number	0 (Trial mode)	1 (Free Demo)	3 (WISP CPE)	4 (WISP)	5 (WISP)	6 (Controller)
Price	no key	registration required	volume only	\$45	\$95	\$250
Initial Config Support	–	–	–	15 days	30 days	30 days
Wireless AP	24h trial	–	–	yes	yes	yes
Wireless Client and Bridge	24h trial	–	yes	yes	yes	yes
RIP, OSPF, BGP protocols	24h trial	–	yes(*)	yes	yes	yes
EoIP tunnels	24h trial	1	unlimited	unlimited	unlimited	unlimited
PPPoE tunnels	24h trial	1	200	200	500	unlimited
PPTP tunnels	24h trial	1	200	200	500	unlimited
L2TP tunnels	24h trial	1	200	200	500	unlimited
OVPN tunnels	24h trial	1	200	200	unlimited	unlimited
VLAN interfaces	24h trial	1	unlimited	unlimited	unlimited	unlimited
HotSpot active users	24h trial	1	1	200	500	unlimited
RADIUS client	24h trial	–	yes	yes	yes	yes
Queues	24h trial	1	unlimited	unlimited	unlimited	unlimited
Web proxy	24h trial	–	yes	yes	yes	yes
User manager active sessions	24h trial	1	10	20	50	Unlimited
Number of KVM guests	none	1	Unlimited	Unlimited	Unlimited	Unlimited

LANGKAH – LANGKAH PEMBUATAN

- Perlu izin untuk mengakses akun staf (dosen) pada sistem informasi akademik.
- Membuat aplikasi manajemen user hotspot (download di internet)
- Modifikasi autentikasi (ex. hash password akun ?) mikrotik sesuaikan dengan sistem informasi akademik anda.
- Sinkronisasi data sistem informasi akademik dengan user hotspot anda.

BENTUK DATA AKUN SIA

Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

+ Options

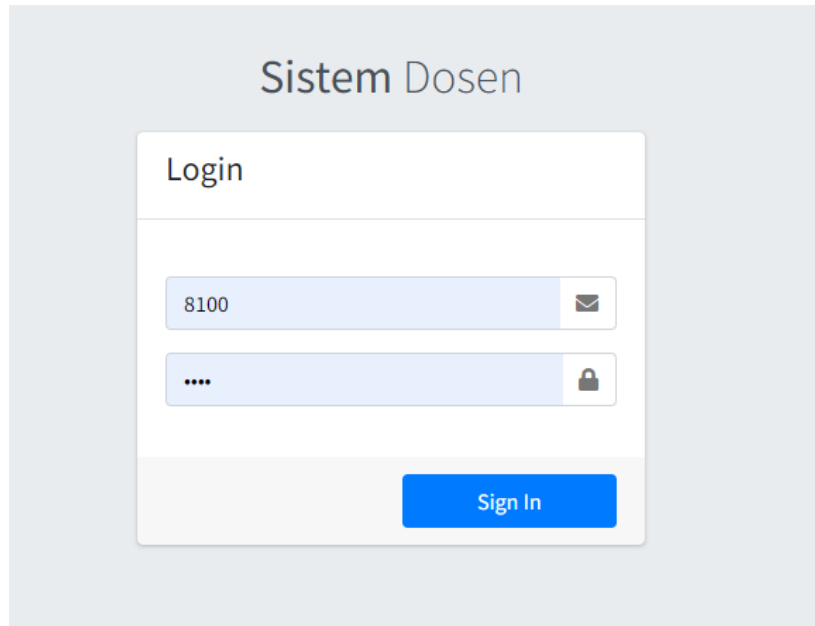
	id	password	id_dosen	id_user	web_token	token
<input type="checkbox"/> Edit Copy Delete	419	*B8D0FBD643A24689A752D75894C94E9735846F5B	8100	25	a0026a5e4abff1cae0fec219909fdd12636dd8f5	
<input type="checkbox"/> Edit Copy Delete	422	*625AA2B36E56EAA516D774CCCE8E08259741ED06	8101	25	74680ffd36231bf3e826f8b50b38382d77a3628f	
<input type="checkbox"/> Edit Copy Delete	423	*09E81D600391E60FBB2E0713CD7C91AE5F1CB846	8102	25	ec9ff6ee3cd46af86c521cb340246f0fdd547009	
<input type="checkbox"/> Edit Copy Delete	424	*AEB038C4F2E650055EC449DB41BAD6C1260E203E	8103	25	b885113accad9b06b133c717a893cc4ab0f6e636	
<input type="checkbox"/> Edit Copy Delete	425	*ECDCE9BC5F0ED710CE7BFF1F79C61AC79C87396F	8104	25	22cc6f27f0bf1ab2c167582c53fb87002d09a23c	

Check all | With selected: Edit Copy Delete Export

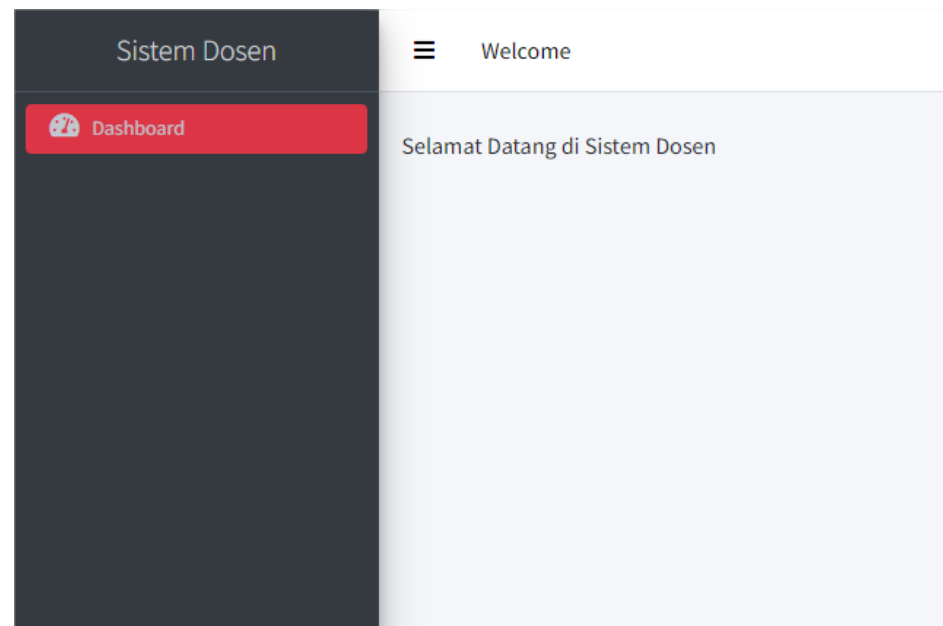
Show all | Number of rows: 25 | Filter rows: Search this table | Sort by key: None

Akun SIA perlu diamankan dengan hash yang menurut anda aman

LOGIN SIA (SISTEM DOSEN)



The screenshot shows a login form titled "Sistem Dosen". The form has a "Login" header. Below it, there are two input fields: the first contains the number "8100" and has an envelope icon on the right; the second contains four dots "...." and has a lock icon on the right. At the bottom of the form is a blue button labeled "Sign In".



Bagaimana caranya agar akun yang di gunakan di SIA bisa dipakai untuk mengakses internet

MODIFIKASI FILE (LOGIN.HTML)

```
function doLogin() {
    document.sendin.username.value = document.login.username.value;
    document.sendin.password.value = hexMD5('${chap-id}' + password(document.login.password.value) + '${chap-challenge}');
    document.sendin.submit();
    return false;
}

function sha1(str, hex = false) {
    var rotate_left = function(n, s) {
        var t4 = (n << s) | (n >>> (32 - s));
        return t4;
    };
    var cvt_hex = function(val) {
        var str = '';
        var i;
        var v;


        for (i = 7; i >= 0; i--) {
            v = (val >>> (i * 4)) & 0x0f;
            str += v.toString(16);
        }
        return str;
    };

    var blockstart;
    var i, j;
    var W = new Array(80);
    var H0 = 0x67452301;
    var H1 = 0xEFCDAB89;
    var H2 = 0x98BADCFE;
    var H3 = 0x10325476;
    var H4 = 0xC3D2E1F0;
    var A, B, C, D, E;
    var temp;
```

Buat supaya inputan password di hash sebelum disubmit (cek file login.html).

Anda bisa memodifikasi sedikit file ini dengan menambahkan beberapa baris code.

SISTEM MANAJEMEN USER HOTSPOT

Sistem Informasi Manajemen User Hotspot Admin 

User > Dosen

[Sync](#)

No	Server	Username	Profile	Action
1	hotspot1	8100	dosen	✕ Nonaktifkan 🗑️ Hapus
2	hotspot1	8101	dosen	✕ Nonaktifkan 🗑️ Hapus
3	hotspot1	8102	dosen	✕ Nonaktifkan 🗑️ Hapus
4	hotspot1	8103	dosen	✕ Nonaktifkan 🗑️ Hapus
5	hotspot1	8104	dosen	✕ Nonaktifkan 🗑️ Hapus

Digunakan untuk mengakses user hotspot dan integrasi dengan Sistem Informasi Akademik (SIA)

DATA USER SETELAH INTEGRASI

The screenshot displays the Mikrotik Hotspot configuration interface. At the top, there are tabs for 'Server Profiles', 'Users', 'User Profiles', 'Active', 'Hosts', 'IP Bindings', 'Service Ports', 'Walled Garden', and 'Walled Garden IP List'. Below the tabs are several icons and buttons, including 'Reset Counters' and 'Reset All Counters'. A table lists the users, with columns for 'Server', 'Name', 'Address', 'MAC Address', 'Profile', and 'Uptime'. The table contains 7 items, with 'hotspot1 8100' selected. Below the table, a dialog box titled 'Hotspot User <8100>' is open, showing the configuration for the selected user. The 'General' tab is active, and the 'Password' field is highlighted with a red box, containing the hash '*B8D0FBD643A24689A7521'. Other fields include 'Server: hotspot1', 'Name: 8100', 'Profile: dosen', and 'Uptime: 00:35:22'.

Server	Name	Address	MAC Address	Profile	Uptime
all	admin			default	00:40:46
hotspot1	8100			dosen	00:35:22
hotspot1	8101			dosen	00:00:00
hotspot1	8102			dosen	00:00:00
hotspot1	8103			dosen	00:00:00
hotspot1	8104			dosen	00:00:00

Hotspot User <8100>

General Limits Statistics

Server: hotspot1

Name: 8100

Password: *B8D0FBD643A24689A7521

Address:

MAC Address:

Profile: dosen

Routes:

Email:

OK

Cancel

Apply

Disable

Comment

Copy

Remove

Reset Counters

Reset All Counters

enabled

Perhatikan password user, dengan di hash seperti itu maka admin sekalipun tidak paham apalagi orang lain.

Terhindar untuk mengetahui apa password user.

SAAT LOGIN

Please log on to use the internet hotspot service

login
password

HOTSPOT GATEWAY

powered by *MikroTik*

Powered by MikroTik RouterOS

Welcome 8100!

IP address:	200.100.10.254
bytes up/down:	0 B / 0 B
connected:	0s
status refresh:	1m



VIDEO DEMO

bit.ly/demoradius

Terima Kasih