

# IP Over QR Codes

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[Backup](#)

<html> <p>We've seen networks built over some interesting mediums, but QR codes has to be a new one. [Eric Seifert] decided to try to <a href=„<http://seiferteric.com/?p=356>“ target=„\_blank“>use QR codes to make an IP connection</a>. He used these visual codes to create a bi-directional connection between two camera-equipped computers. He's a persistent chap, because it works: in one of his videos, he shows an SSH connection between two devices.</p> <p>He faced a number of challenges on the way. Although there is plenty of code to read QR codes, the data that can be encoded and read from them is limited. There is a binary mode that can be used with QR codes, but it is really inefficient. [Eric] decided to use base32 coding instead, packing the data into each frame as alphanumeric text. Each QR code image that is created and received is numbered, so the system can keep track and request any lost images. He also had some problems with keeping the data consistent between the encoded and decoded versions, so he had to add some packing to the data before it would work. It uses <a href=„<https://pypi.python.org/pypi/python-pytun/0.2>“ target=„\_blank“>Python-pytun</a> to create a TUN/TAP device that carries the data.</p> <p>The speed of the connection is rather slow: in his demo video, the two computers take over a minute to exchange keys for an SSH connection, and [Eric] measured the speed of the connection at about 100 bits per second. But even getting something like this working at all is a significant achievement. He has published <a href=„<https://github.com/seiferteric/qrtn>“ target=„\_blank“>his code on GitHub.</p> <p>We've featured the work of [Eric] before: he created a data connection using an <a href=„<http://hackaday.com/2007/12/13/ipod-transmitter-radio-modem/>“>iPod FM transmitter</a>.</p> <p><iframe class=„youtube-player“ type=„text/html“ width=„800“ height=„480“ src=„[http://www.youtube.com/embed/N\\_Qr5AP\\_2wU?version=3&amp;rel=1&amp;fs=1&amp;autohid=2&amp;showsearch=0&amp;showinfo=1&amp;iv\\_load\\_policy=1&amp;wmode=transparent](http://www.youtube.com/embed/N_Qr5AP_2wU?version=3&amp;rel=1&amp;fs=1&amp;autohid=2&amp;showsearch=0&amp;showinfo=1&amp;iv_load_policy=1&amp;wmode=transparent)“ allowfullscreen=„true“ style=„border:0;“>[embedded content]</iframe></p> </html>

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Last update: **2021/12/06 15:24**

