

# Report for: Wifi Capacity Test



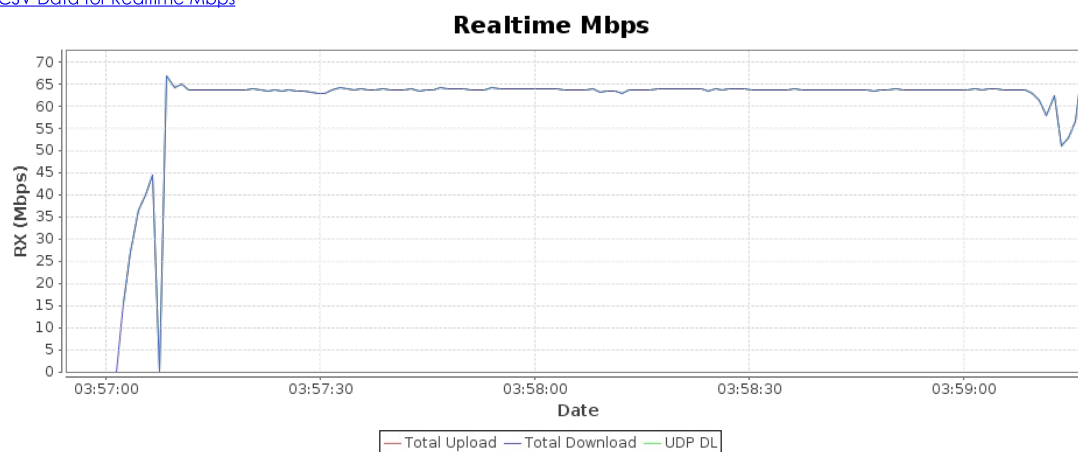
Thu Feb 17 03:59:19 PST 2022

## Objective

The Candela WiFi Capacity test is designed to measure performance of an Access Point when handling different amounts of WiFi Stations. The test allows the user to increase the number of stations in user defined steps for each test iteration and measure the per station and the overall throughput for each trial. Along with throughput other measurements made are client connection times, Fairness, % packet loss, DHCP times and more. The expected behavior is for the AP to be able to handle several stations (within the limitations of the AP specs) and make sure all stations get a fair amount of airtime both in the upstream and downstream. An AP that scales well will not show a significant over-all throughput decrease as more stations are added.

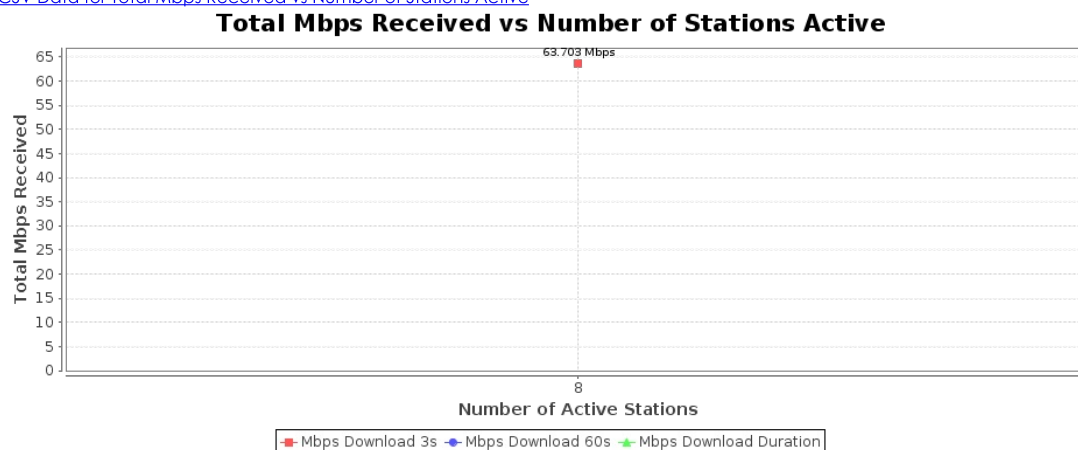
Realtime Graph shows summary download and upload RX bps of connections created by this test.

[CSV Data for Realtime Mbps](#)



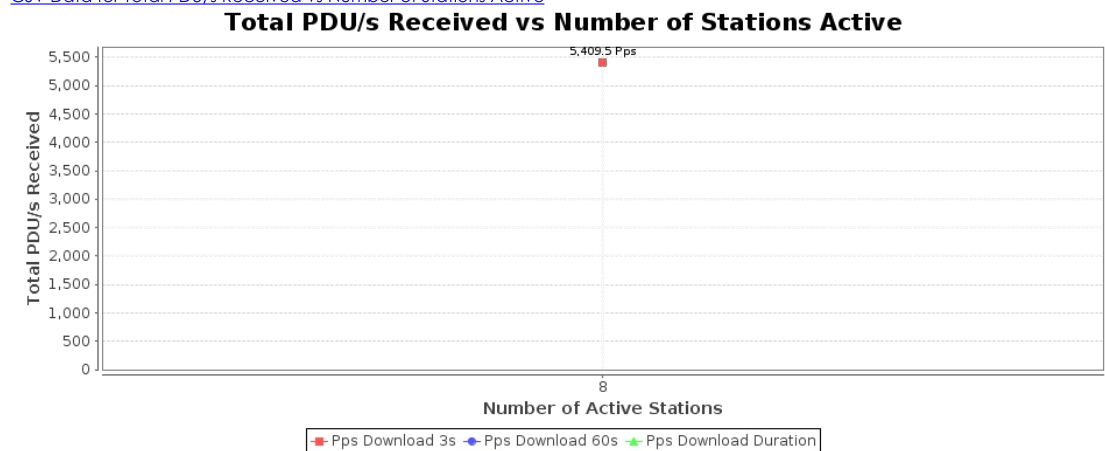
Total Megabits-per-second transferred. This only counts the protocol payload, so it will not count the Ethernet, IP, UDP, TCP or other header overhead. A well behaving system will show about the same rate as stations increase. If the rate decreases significantly as stations increase, then it is not scaling we

[CSV Data for Total Mbps Received vs Number of Stations Active](#)



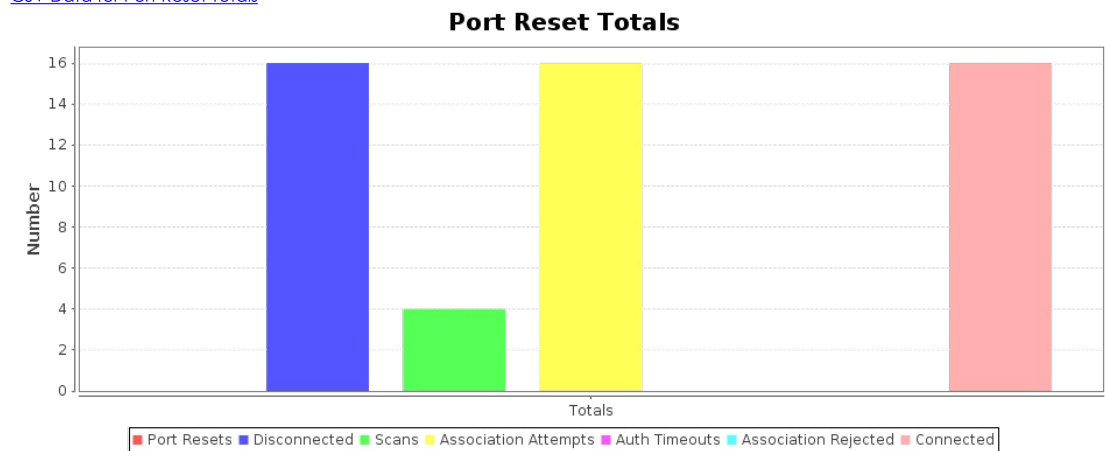
Protocol-Data-Units received. For TCP, this does not mean much, but for UDP connections, this correlates to packet size. If the PDU size is larger than what fits into a single frame, then the network stack will segment it accordingly. A well behaving system will show about the same rate as stations increase. If the rate decreases significantly as stations increase, then it is not scaling well.

[CSV Data for Total PDU/s Received vs Number of Stations Active](#)



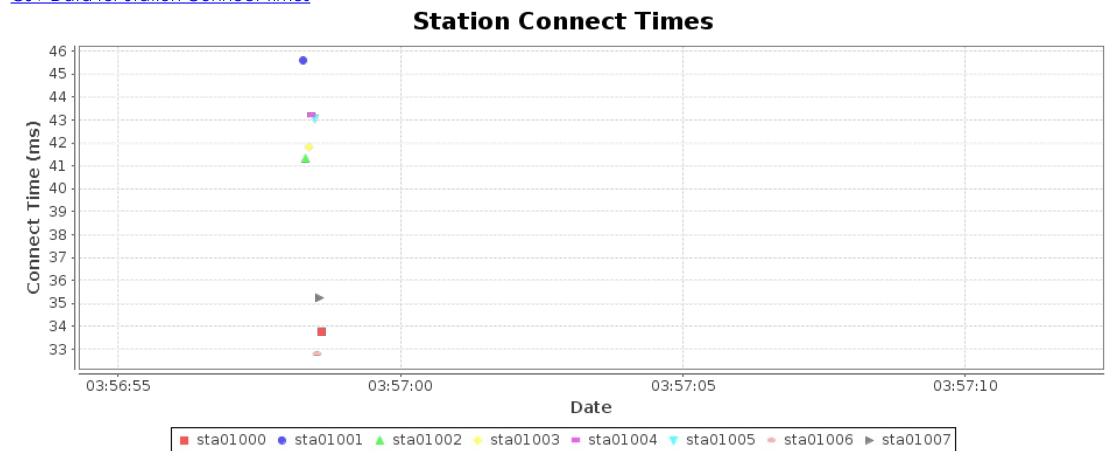
Station disconnect stats. These will be only for the last iteration. If the 'Clear Reset Counters' option is selected, the stats are cleared after the initial association. Any re-connects reported indicate a potential stability issue. Can be used for long-term stability testing in cases where you bring up all stations in one iteration and then run the test for a longer duration.

[CSV Data for Port Reset Totals](#)



Station connect time is calculated from the initial Authenticate message through the completion of Open or RSN association/authentication.

[CSV Data for Station Connect Times](#)



Station Increment:	8
Loop Iterations:	Single (1)
Duration:	2 min (2 m)
Protocol:	UDP-IPv4
Layer 4-7 Endpoint:	NONE
Payload Size:	AUTO
MSS	AUTO
Per-Station Download Rate:	8Mbps
Total Upload Rate:	Zero (0 bps)
Percentage TCP Rate:	10% (10%)
Set Bursty Minimum Speed:	Burst Mode Disabled (-1)
Randomize Rates	true
Leave Ports Up	false
Socket buffer size:	OS Default
Settle Time:	5 sec (5 s)
Rpt Timer:	fast (1 s)
IP ToS:	Best Effort (0)
Multi-Conn:	AUTO
Show-Per-Iteration-Charts	true
Show-Per-Loop-Totals	true
Hunt-Lower-Rates	false
Show Events	true
Clear Reset Counters	false
CSV Reporting Dir	/home/lanforge/report-data/wifi-cap-csv-data-2022-02-17_03.56
Build Date	Thu 13 Jan 2022 01:27:32 PM PST
Build Version	5.4.4
Git Version	c419229103db6f1917b40d5169b2c9926b273e51
Ports	1.1.eth2 1.1.sta01000 1.1.sta01001 1.1.sta01002 1.1.sta01003 1.1.sta01004 1.1.sta01005 1.1.sta01006 1.1.sta01007
Firmware	10.4b-ct-9984-xtH-13-b1b524c8e5 0x80000aef, 1.1876.0
Machines	ct523c-3011

Requested Parameters:

Download Rate: Per station: 8000000 ( 8 Mbps) All: 64000000 ( 64 Mbps)  
 Upload Rate: Per station: 0 ( 0 bps) All: 0 ( 0 bps)  
 Total: 64000000 ( 64 Mbps)  
 Station count: 8 Connections per station: 1 Payload (PDU) sizes: AUTO (AUTO)

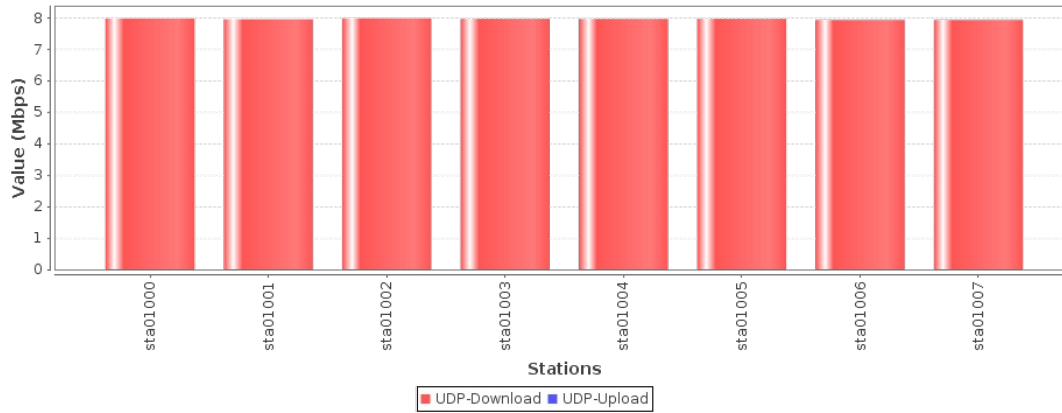
Observed Rate:

Download Rate: Cx Min: 7 Mbps Cx Ave: 7 Mbps Cx Max: 7 Mbps All Cx: 63 Mbps  
 Upload Rate: Cx Min: 0 bps Cx Ave: 0 bps Cx Max: 0 bps All Cx: 0 bps  
 Total: 63 bps  
 Aggregated Rate: Min: 7 Mbps Avg: 7 Mbps Max: 7 Mbps

This graph shows fairness. On a fair system, each station should get about the same throughput. In the download direction, it is mostly the device-under-test that is responsible for this behavior, but in the upload direction, LANforge itself would be the source of most fairness issues unless the device-under-test takes specific actions to ensure fairness.

[CSV Data for Combined Mbps, 60 second running average](#)

Combined Mbps, 60 second running average



Requested Parameters:

Download Rate: Per station: 8000000 ( 8 Mbps) All: 64000000 ( 64 Mbps)  
Upload Rate: Per station: 0 ( 0 bps) All: 0 ( 0 bps)  
Total: 64000000 ( 64 Mbps)  
Station count: 8 Connections per station: 1 Payload (PDU) sizes: AUTO (AUTO)

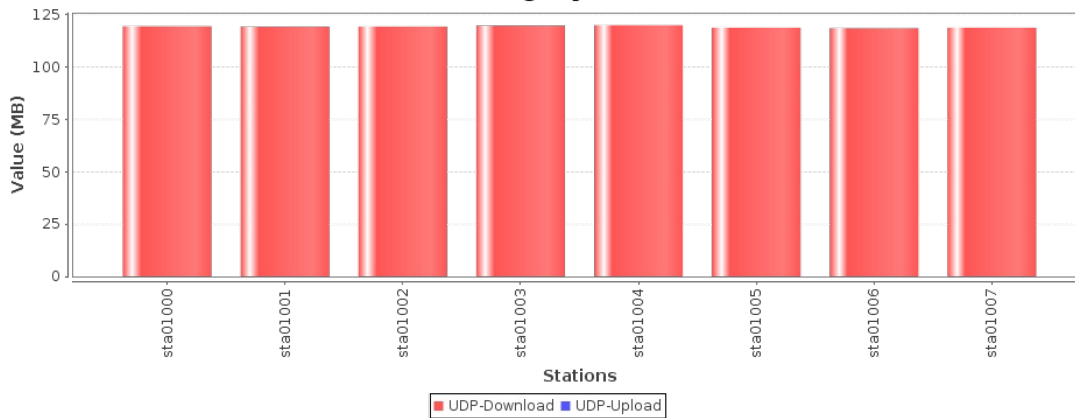
Observed Amount:

Download Amount: Cx Min: 118 B Cx Ave: 119 B Cx Max: 120 B All Cx: 954 B  
Upload Amount: Cx Min: 0 B Cx Ave: 0 B Cx Max: 0 B All Cx: 0 B  
Total: 954 B

This graph shows fairness. On a fair system, each station should get about the same throughput. In the download direction, it is mostly the device-under-test that is responsible for this behavior, but in the upload direction, LANforge itself would be the source of most fairness issues unless the device-under-test takes specific actions to ensure fairness.

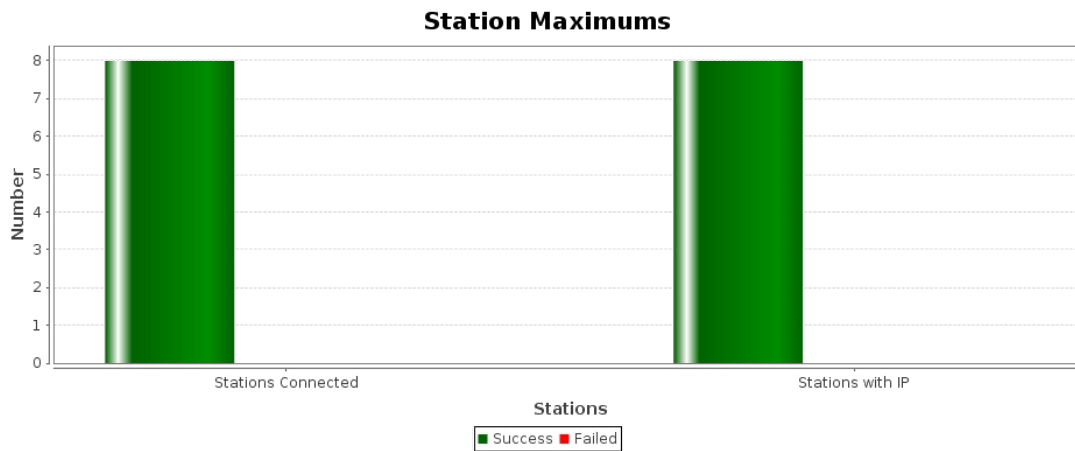
[CSV Data for Combined Received Megabytes, for entire 2 m run](#)

Combined Received Megabytes, for entire 2 m run



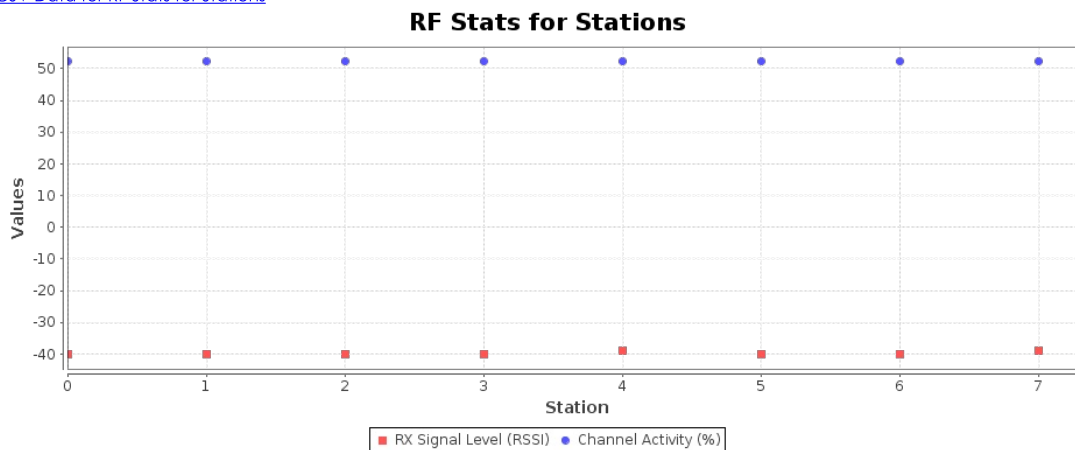
Maximum Stations Connected: 8  
Stations NOT connected at this time: 0  
Maximum Stations with IP Address: 8  
Stations without IP at this time: 0

[CSV Data for Station Maximums](#)



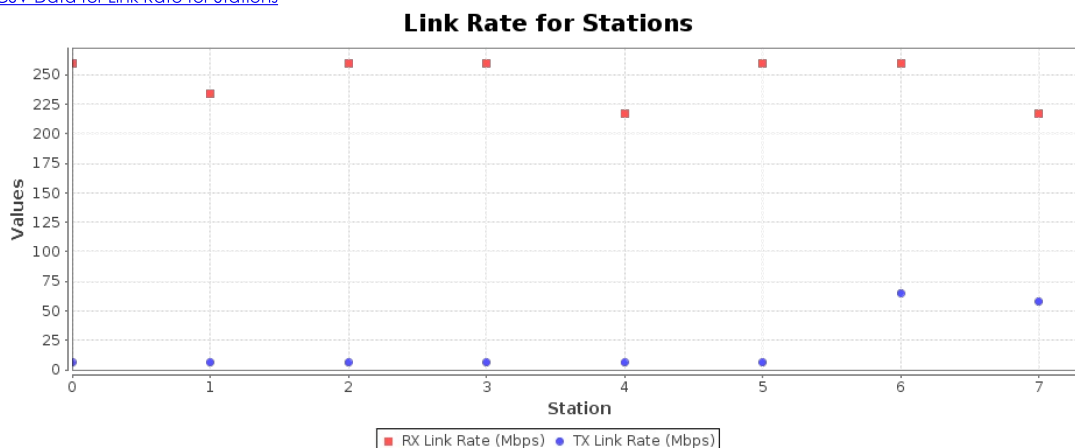
RF stats give an indication of how well how congested is the RF environment. Channel activity is what the wifi radio reports as the busy-time for the RF environment. It is expected that this be near 100% when LANforge is running at max speed, but at lower speeds, this should be a lower percentage unless the RF environment is busy with other systems.

[CSV Data for RF Stats for Stations](#)



Link rate stats give an indication of how well the rate-control is working. For rate-control, the 'RX' link rate corresponds to what the device-under-test is transmitting. If all of the stations are on the same radio, then the TX and RX encoding rates should be similar for all stations. If there is a definite pattern where some stations do not get good RX rate, then probably the device-under-test has rate-control problems. The TX rate is what LANforge is transmitting at.

[CSV Data for Link Rate for Stations](#)



[Key Performance Indicators CSV](#)

Scan Results for SSIDs used in this test.

BSS 14:16:9d:53:58:cc(on sta01000)  
last seen: 523014.941s [boottime]  
TSF: 1274788221708 usec (14d, 18:06:28)  
freq: 5180  
beacon interval: 100 TUs  
capability: ESS Privacy SpectrumMgmt ShortSlotTime RadioMeasure (0x1511)  
signal: -49.00 dBm  
last seen: 3446 ms ago  
Information elements from Probe Response frame:  
SSID: ssid\_wpa2\_5g  
Supported rates: 6.0\* 9.0 12.0\* 18.0 24.0\* 36.0 48.0 54.0  
DS Parameter set: channel 36  
Country: US Environment: bogus  
Channels [36 - 36] @ 20 dBm  
Channels [40 - 40] @ 20 dBm  
Channels [44 - 44] @ 20 dBm  
Channels [48 - 48] @ 20 dBm  
Channels [52 - 52] @ 15 dBm  
Channels [56 - 56] @ 15 dBm  
Channels [60 - 60] @ 15 dBm  
Channels [64 - 64] @ 15 dBm  
Channels [100 - 100] @ 14 dBm  
Channels [104 - 104] @ 14 dBm  
Channels [108 - 108] @ 14 dBm  
Channels [112 - 112] @ 14 dBm  
Channels [116 - 116] @ 14 dBm  
Channels [120 - 120] @ 14 dBm  
Channels [124 - 124] @ 14 dBm  
Channels [128 - 128] @ 14 dBm  
Channels [132 - 132] @ 14 dBm  
Channels [136 - 136] @ 14 dBm  
Channels [140 - 140] @ 14 dBm  
Channels [144 - 144] @ 13 dBm  
Channels [149 - 149] @ 26 dBm  
Channels [153 - 153] @ 26 dBm  
Channels [157 - 157] @ 26 dBm  
Channels [161 - 161] @ 26 dBm  
Channels [165 - 165] @ 26 dBm  
Power constraint: 3 dB  
TPC report: TX power: 20 dBm  
RSN:  
\* Version: 1  
\* Group cipher: CCMP  
\* Pairwise ciphers: CCMP  
\* Authentication suites: PSK  
\* Capabilities: 4-PTKSA-RC 4-GTKSA-RC (0x0028)  
BSS Load:  
\* station count: 0  
\* channel utilisation: 3/255  
\* available admission capacity: 23437 [\*32us]  
RM enabled capabilities:  
Capabilities: 0x73 0xd0 0x00 0x00 0x0c  
Link Measurement  
Neighbor Report  
Beacon Passive Measurement  
Beacon Active Measurement  
Beacon Table Measurement  
LCI Measurement  
Transmit Stream/Category Measurement  
Triggered Transmit Stream/Category  
FTM Range Report  
Civic Location Measurement  
Nonoperating Channel Max Measurement Duration: 0  
Measurement Pilot Capability: 4  
HT capabilities:  
Capabilities: 0x86f  
RX LDPC  
HT20/HT40  
SM Power Save disabled  
RX HT20 SGI  
RX HT40 SGI  
No RX STBC  
Max AMSDU length: 7935 bytes  
No DSSS/CCK HT40  
Maximum RX AMPDU length 65535 bytes (exponent: 0x003)  
Minimum RX AMPDU time spacing: No restriction (0x00)  
HT TX/RX MCS rate indexes supported: 0-31  
HT operation:  
\* primary channel: 36  
\* secondary channel offset: above  
\* STA channel width: any  
\* RIFS: 0  
\* HT protection: no  
\* non-GF present: 0  
\* OBSS non-GF present: 0  
\* dual beacon: 0  
\* dual CTS protection: 0  
\* STBC beacon: 0  
\* L-SIG TXOP Prot: 0  
\* PCO active: 0  
\* PCO phase: 0  
Extended capabilities:  
\* Extended Channel Switching  
\* BSS Transition  
\* Operating Mode Notification  
\* Max Number Of MSDUs In A-MSDU is unlimited  
VHT capabilities:

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VHT Capabilities (0x338ff876):
    Max MPDU length: 11454
    Supported Channel Width: 160 MHz
    RX LDPC
    short GI (80 MHz)
    short GI (160/80+80 MHz)
    SU Beamformer
    SU Beamformee
    MU Beamformer
    RX antenna pattern consistency
    TX antenna pattern consistency
VHT RX MCS set:
    1 streams: MCS 0-9
    2 streams: MCS 0-9
    3 streams: MCS 0-9
    4 streams: MCS 0-9
    5 streams: not supported
    6 streams: not supported
    7 streams: not supported
    8 streams: not supported
VHT RX highest supported: 0 Mbps
VHT TX MCS set:
    1 streams: MCS 0-9
    2 streams: MCS 0-9
    3 streams: MCS 0-9
    4 streams: MCS 0-9
    5 streams: not supported
    6 streams: not supported
    7 streams: not supported
    8 streams: not supported
VHT TX highest supported: 0 Mbps
VHT operation:
    * channel width: 1 (80 MHz)
    * center freq segment 1: 42
    * center freq segment 2: 50
    * VHT basic MCS set: 0xffffc
Transmit Power Envelope:
    * Local Maximum Transmit Power For 20 MHz: 30 dBm
    * Local Maximum Transmit Power For 40 MHz: 30 dBm
    * Local Maximum Transmit Power For 80 MHz: 30 dBm
    * Local Maximum Transmit Power For 160/80+80 MHz: 30 dBm
HE capabilities:
    HE MAC Capabilities (0x01099a081040):
        +HTC HE Supported
        Dynamic BA Fragmentation Level: 1
        Minimum Payload size of 128 bytes: 1
        BSR
        OM Control
        Maximum A-MPDU Length Exponent: 3
        RX Control Frame to MultiBSS
        A-MSDU in A-MPDU
        OM Control UL MU Data Disable RX
    HE PHY Capabilities: (0x0c6040887f5f811c010800):
        HE40/HE80/5GHz
        HE160/5GHz
        LDPC Coding in Payload
        HE SU PPDU with 1x HE-LTF and 0.8us GI
        Full Bandwidth UL MU-MIMO
        DCM Max Constellation Rx: 1
        SU Beamformer
        SU Beamformee
        MU Beamformer
        Beamformee STS <= 80Mhz: 7
        Beamformee STS > 80Mhz: 3
        Sounding Dimensions <= 80Mhz: 7
        Sounding Dimensions > 80Mhz: 3
        Ng = 16 SU Feedback
        Codebook Size SU Feedback
        PPE Threshold Present
        HE SU PPDU & HE PPDU 4x HE-LTF 0.8us GI
        Max NC: 3
        HE ER SU PPDU 4x HE-LTF 0.8us GI
        RX 1024-QAM
    HE RX MCS and NSS set <= 80 MHz
        1 streams: MCS 0-11
        2 streams: MCS 0-11
        3 streams: MCS 0-11
        4 streams: MCS 0-11
        5 streams: MCS 0-11
        6 streams: MCS 0-11
        7 streams: MCS 0-11
        8 streams: MCS 0-11
    HE TX MCS and NSS set <= 80 MHz
        1 streams: MCS 0-11
        2 streams: MCS 0-11
        3 streams: MCS 0-11
        4 streams: MCS 0-11
        5 streams: MCS 0-11
        6 streams: MCS 0-11
        7 streams: MCS 0-11
        8 streams: MCS 0-11
    HE RX MCS and NSS set 160 MHz
        1 streams: MCS 0-11
        2 streams: MCS 0-11
        3 streams: MCS 0-11
        4 streams: MCS 0-11
        5 streams: not supported
        6 streams: not supported
        7 streams: not supported
        8 streams: not supported
    HE TX MCS and NSS set 160 MHz
        1 streams: MCS 0-11

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        2 streams: MCS 0-11
        3 streams: MCS 0-11
        4 streams: MCS 0-11
        5 streams: not supported
        6 streams: not supported
        7 streams: not supported
        8 streams: not supported
PPE Threshold 0x7f 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71
WMM:   * Parameter version 1
      * u-APSD
      * BE: CW 15-1023, AIFS 3
      * BK: CW 15-1023, AIFS 7
      * VI: CW 7-15, AIFS 2, TXOP 3008 usec
      * VO: CW 3-7, AIFS 2, TXOP 1504 usec

BSS 68:7d:b4:5f:5c:3e(on sta01000) -- associated
last seen: 604050.607s [boottime]
TSF: 658262109644 usec (7d, 14:51:02)
freq: 5180
beacon interval: 100 TUs
capability: ESS Privacy SpectrumMgmt ShortSlotTime RadioMeasure (0x1511)
signal: -65.00 dBm
last seen: 34 ms ago
Information elements from Probe Response frame:
SSID: ssid_wpa2_5g
Supported rates: 6.0* 9.0 12.0* 18.0 24.0* 36.0 48.0 54.0
DS Parameter set: channel 36
Country: US       Environment: bogus
Channels [36 - 36] @ 21 dBm
Channels [40 - 40] @ 24 dBm
Channels [44 - 44] @ 24 dBm
Channels [48 - 48] @ 24 dBm
Channels [52 - 52] @ 18 dBm
Channels [56 - 56] @ 18 dBm
Channels [60 - 60] @ 18 dBm
Channels [64 - 64] @ 18 dBm
Channels [100 - 100] @ 18 dBm
Channels [104 - 104] @ 19 dBm
Channels [108 - 108] @ 19 dBm
Channels [112 - 112] @ 19 dBm
Channels [116 - 116] @ 19 dBm
Channels [120 - 120] @ 19 dBm
Channels [124 - 124] @ 19 dBm
Channels [128 - 128] @ 19 dBm
Channels [132 - 132] @ 19 dBm
Channels [136 - 136] @ 19 dBm
Channels [140 - 140] @ 18 dBm
Channels [144 - 144] @ 18 dBm
Channels [149 - 149] @ 26 dBm
Channels [153 - 153] @ 26 dBm
Channels [157 - 157] @ 26 dBm
Channels [161 - 161] @ 26 dBm
Channels [165 - 165] @ 26 dBm
Power constraint: 3 dB
TPC report: TX power: 21 dBm
RSN:    * Version: 1
      * Group cipher: CCMP
      * Pairwise ciphers: CCMP
      * Authentication suites: PSK
      * Capabilities: 4-PTKSA-RC 4-GTKSA-RC (0x0028)

BSS Load:
* station count: 16
* channel utilisation: 134/255
* available admission capacity: 23437 [*32us]

RM enabled capabilities:
Capabilities: 0x73 0xd0 0x00 0x00 0x0c
Link Measurement
Neighbor Report
Beacon Passive Measurement
Beacon Active Measurement
Beacon Table Measurement
LCI Measurement
Transmit Stream/Category Measurement
Triggered Transmit Stream/Category
FTM Range Report
Civic Location Measurement
Nonoperating Channel Max Measurement Duration: 0
Measurement Pilot Capability: 4

HT capabilities:
Capabilities: 0x82d
RX LDPC
HT20
SM Power Save disabled
RX HT20 SGI
No RX STBC
Max AMSDU length: 7935 bytes
No DSSS/CCK HT40
Maximum RX AMPDU length 65535 bytes (exponent: 0x003)
Minimum RX AMPDU time spacing: No restriction (0x00)
HT TX/RX MCS rate indexes supported: 0-31

HT operation:
* primary channel: 36
* secondary channel offset: no secondary
* STA channel width: 20 MHz
* RIFS: 0
* HT protection: no
* non-GF present: 1
* OBSS non-GF present: 0
* dual beacon: 0
* dual CTS protection: 0
* STRC beacon: 0
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HE capabilities:
  HE MAC Capabilities: (0x01099a081040):
    +HTC HE Supported
    Dynamic BA Fragmentation Level: 1
    Minimum Payload size of 128 bytes: 1
    BSR
    OM Control
    Maximum A-MPDU Length Exponent: 3
    RX Control Frame to MultiBSS
    A-MSDU in A-MPDU
    OM Control UL MU Data Disable RX
  HE PHY Capabilities: (0x006040881f47811c010800):
    LDPC Coding in Payload
    HE SU PPDU with 1x HE-LTF and 0.8us GI
    Full Bandwidth UL MU-MIMO
    DCM Max Constellation Rx: 1
    SU Beamformer
    SU Beamformee
    MU Beamformer
    Beamformee STS <= 80Mhz: 7
    Sounding Dimensions <= 80Mhz: 7
    Ng = 16 SU Feedback
    Codebook Size SU Feedback
    PPE Threshold Present
    HE SU PPDU & HE PPDU 4x HE-LTF 0.8us GI
    Max NC: 3
    HE ER SU PPDU 4x HE-LTF 0.8us GI
    RX 1024-QAM

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16:9d:53:58:cd(on sta0000)
last seen: 539564.032s [boottime]
TSF: 1291337416504 usec (14d, 22:42:17)
freq: 5180
beacon interval: 100 TUs
capability: ESS Privacy SpectrumMgmt ShortSlotTime RadioMeasure (0x1511)
signal: -49.00 dBm
last seen: 3861 ms ago
Information elements from Probe Response frame:
SSID: ssid_wpa2_5g
Supported rates: 6.0* 9.0 12.0* 18.0 24.0* 36.0 48.0 54.0
DS Parameter set: channel 36
Country: US      Environment: bogus
    Channels [36 - 36] @ 20 dBm
    Channels [40 - 40] @ 20 dBm
    Channels [44 - 44] @ 20 dBm

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Channels [48 - 48] @ 20 dBm
Channels [52 - 52] @ 15 dBm
Channels [56 - 56] @ 15 dBm
Channels [60 - 60] @ 15 dBm
Channels [64 - 64] @ 15 dBm
Channels [100 - 100] @ 14 dBm
Channels [104 - 104] @ 14 dBm
Channels [108 - 108] @ 14 dBm
Channels [112 - 112] @ 14 dBm
Channels [116 - 116] @ 14 dBm
Channels [120 - 120] @ 14 dBm
Channels [124 - 124] @ 14 dBm
Channels [128 - 128] @ 14 dBm
Channels [132 - 132] @ 14 dBm
Channels [136 - 136] @ 14 dBm
Channels [140 - 140] @ 14 dBm
Channels [144 - 144] @ 13 dBm
Channels [149 - 149] @ 26 dBm
Channels [153 - 153] @ 26 dBm
Channels [157 - 157] @ 26 dBm
Channels [161 - 161] @ 26 dBm
Channels [165 - 165] @ 26 dBm
Power constraint: 3 dB
TPC report: TX power: 20 dBm
RSN:
    * Version: 1
    * Group cipher: CCMP
    * Pairwise ciphers: CCMP
    * Authentication suites: PSK
    * Capabilities: 4-PTKSA-RC 4-GTKSA-RC (0x0028)
BSS Load:
    * station count: 0
    * channel utilisation: 3/255
    * available admission capacity: 23437 [*32us]
RM enabled capabilities:
    Capabilities: 0x73 0xd0 0x00 0x00 0x0c
        Link Measurement
        Neighbor Report
        Beacon Passive Measurement
        Beacon Active Measurement
        Beacon Table Measurement
        LCI Measurement
        Transmit Stream/Category Measurement
        Triggered Transmit Stream/Category
        FTM Range Report
        Civic Location Measurement
    Nonoperating Channel Max Measurement Duration: 0
    Measurement Pilot Capability: 4
HT capabilities:
    Capabilities: 0x86f
        RX LDPC
        HT20/HT40
        SM Power Save disabled
        RX HT20 SGI
        RX HT40 SGI
        No RX STBC
        Max AMSDU length: 7935 bytes
        No DSSS/CCK HT40
    Maximum RX AMPDU length 65535 bytes (exponent: 0x003)
    Minimum RX AMPDU time spacing: No restriction (0x00)
    HT TX/RX MCS rate indexes supported: 0-31
HT operation:
    * primary channel: 36
    * secondary channel offset: above
    * STA channel width: any
    * RIFS: 0
    * HT protection: no
    * non-GF present: 0
    * OBSS non-GF present: 0
    * dual beacon: 0
    * dual CTS protection: 0
    * STBC beacon: 0
    * L-SIG TXOP Prot: 0
    * PCO active: 0
    * PCO phase: 0
Extended capabilities:
    * Extended Channel Switching
    * BSS Transition
    * Operating Mode Notification
    * Max Number Of MSDUs In A-MSDU is unlimited
VHT capabilities:
    VHT Capabilities (0x338ff876):
        Max MPDU length: 11454
        Supported Channel Width: 160 MHz
        RX LDPC
        short GI (80 MHz)
        short GI (160/80+80 MHz)
        SU Beamformer
        SU Beamformee
        MU Beamformer
        RX antenna pattern consistency
        TX antenna pattern consistency
    VHT RX MCS set:
        1 streams: MCS 0-9
        2 streams: MCS 0-9
        3 streams: MCS 0-9
        4 streams: MCS 0-9
        5 streams: not supported
        6 streams: not supported
        7 streams: not supported
        8 streams: not supported
    VHT RX highest supported: 0 Mbps
    VHT TX MCS set:

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        1 streams: MCS 0-9
        2 streams: MCS 0-9
        3 streams: MCS 0-9
        4 streams: MCS 0-9
        5 streams: not supported
        6 streams: not supported
        7 streams: not supported
        8 streams: not supported
VHT TX highest supported: 0 Mbps
VHT operation:
    * channel width: 1 (80 MHz)
    * center freq segment 1: 42
    * center freq segment 2: 50
    * VHT basic MCS set: 0xfffc
Transmit Power Envelope:
    * Local Maximum Transmit Power For 20 MHz: 30 dBm
    * Local Maximum Transmit Power For 40 MHz: 30 dBm
    * Local Maximum Transmit Power For 80 MHz: 30 dBm
    * Local Maximum Transmit Power For 160/80+80 MHz: 30 dBm
HE capabilities:
    HE MAC Capabilities (0x01099a081040):
        +HTC HE Supported
        Dynamic BA Fragmentation Level: 1
        Minimum Payload size of 128 bytes: 1
        BSR
        OM Control
        Maximum A-MPDU Length Exponent: 3
        RX Control Frame to MultiBSS
        A-MSDU in A-MPDU
        OM Control UL MU Data Disable RX
    HE PHY Capabilities: (0x0c6040887f5f811c010800):
        HE40/HE80/5GHz
        HE160/5GHz
        LDPC Coding in Payload
        HE SU PPDU with 1x HE-LTF and 0.8us GI
        Full Bandwidth UL MU-MIMO
        DCM Max Constellation Rx: 1
        SU Beamformer
        SU Beamformee
        MU Beamformer
        Beamformee STS <= 80Mhz: 7
        Beamformee STS > 80Mhz: 3
        Sounding Dimensions <= 80Mhz: 7
        Sounding Dimensions > 80Mhz: 3
        Ng = 16 SU Feedback
        Codebook Size SU Feedback
        PPE Threshold Present
        HE SU PPDU & HE PPDU 4x HE-LTF 0.8us GI
        Max NC: 3
        HE ER SU PPDU 4x HE-LTF 0.8us GI
        RX 1024-QAM
    HE RX MCS and NSS set <= 80 MHz
        1 streams: MCS 0-11
        2 streams: MCS 0-11
        3 streams: MCS 0-11
        4 streams: MCS 0-11
        5 streams: MCS 0-11
        6 streams: MCS 0-11
        7 streams: MCS 0-11
        8 streams: MCS 0-11
    HE TX MCS and NSS set <= 80 MHz
        1 streams: MCS 0-11
        2 streams: MCS 0-11
        3 streams: MCS 0-11
        4 streams: MCS 0-11
        5 streams: MCS 0-11
        6 streams: MCS 0-11
        7 streams: MCS 0-11
        8 streams: MCS 0-11
    HE RX MCS and NSS set 160 MHz
        1 streams: MCS 0-11
        2 streams: MCS 0-11
        3 streams: MCS 0-11
        4 streams: MCS 0-11
        5 streams: not supported
        6 streams: not supported
        7 streams: not supported
        8 streams: not supported
    HE TX MCS and NSS set 160 MHz
        1 streams: MCS 0-11
        2 streams: MCS 0-11
        3 streams: MCS 0-11
        4 streams: MCS 0-11
        5 streams: not supported
        6 streams: not supported
        7 streams: not supported
        8 streams: not supported
PPE Threshold 0x7f 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71 0x1c 0xc7 0x71
WMM:
    * Parameter version 1
    * u-APSD
    * BE: CW 15-1023, AIFS 3
    * BK: CW 15-1023, AIFS 7
    * VI: CW 7-15, AIFS 2, TXOP 3008 usec
    * VO: CW 3-7, AIFS 2, TXOP 1504 usec

```

