CLAIMS

WHAT IS CLAIMED IS:

1. A battery powered device comprising:

a battery;

one or more processors electrically coupled to the battery;

memory storing instructions executable by the one or more processors to perform operations comprising:

generating a first message that includes first data fields, wherein the first data fields include at least an identifier data field that identifies an endpoint device, a protocol identifier data field that includes a first protocol value that identifies the first data fields, and an additional data field that includes a value;

transmitting, at a first time, the first message;

determining that the first message has been received;

determining that a current value of the additional data field is unchanged from the value included within the first message;

generating a second message that includes second data fields, wherein the second data fields include at least the identifier data field that identifies the endpoint device, and the protocol identifier data field that includes a second protocol value that identifies the second data fields included within the second message, wherein the second data fields are a subset of the first data fields, and wherein the second data fields exclude the additional data field corresponding to the current value that is unchanged; and

transmitting, at a second time, the second message.

2. The battery-powered device of claim 1, wherein determining that the first message has been received comprises receiving a third message that indicates receipt of the first message by a collection device.

3. The battery-powered device of claim 1, wherein the operations further comprise:

receiving a third message from a collection device requesting additional data, wherein the additional data includes a request for an updated value of the value included within the first message and excluded from the second message;

generating a fourth message that includes third data fields, wherein the third data fields include at least the identifier data field that identifies the endpoint device, the protocol identifier data field that includes a third protocol value that identifies the third data fields included within the fourth message, and one or more additional fields that include the additional data; and

transmitting the fourth message.

4. The battery-powered device of claim 1, further comprising determining a number of first data fields to include within the first message based, at least in part, on one or more of a time of year, or a time associated with a previous reading of a utility meter.

5. The battery-powered device of claim 1, wherein the battery-powered device is a utility meter, and wherein the first data fields include a consumption data field that indicates a consumption of the utility meter and a tamper data field that indicates a tampering of a utility meter.

6. The battery-powered device of claim 1, wherein the operations further comprise:

determining that the value included within the first message has changed to an updated value;

generating a third message that includes third data fields, wherein the third data fields include at least the identifier data field that identifies the endpoint device, the protocol identifier data field that includes a third protocol value that identifies the third data fields included within the third message, and the additional data field that indicates the updated value; and

transmitting the third message.

7. The battery-powered device of claim 1, wherein the operations further comprise adjusting a transmission rate associated with transmitting messages based, at least in part, on one or more criteria.

8. A method, comprising:

receiving first data associated with an endpoint device, wherein the first data includes one or more data fields, wherein the one or more data fields include a protocol identifier that identifies the one or more data fields and a device identifier that identifies an endpoint device;

determining based, at least in part, on the protocol identifier that a first data field has been excluded from the one or more data fields of the first data;

determining, a value corresponding to the first data field based, at least in part, on a previous transmission of the value; and

generating a record containing values associated with the one or more data fields and the value.

9. The method of claim 8, wherein the first data is a first bubble-up message transmitted by the endpoint device.

10. The method of claim 8, wherein determining the value comprises one or more of obtaining the value from a data store or requesting the value from another computing device.

11. The method of claim 8, wherein determining the value comprises:

transmitting second data, wherein the second data requests at least the value from another computing device; and

receiving third data that includes the value.

12. The method of claim 8, wherein the value is a consumption value associated with the endpoint device.

13. The method of claim 8, further comprising receiving second data associated with the endpoint device, wherein the second data includes one or more second data fields that include a second protocol identifier that identifies the one or more second data fields and the device identifier that identifies the endpoint device, wherein the one or more second data fields includes at least one different data field from the one or more data fields.

14. The method of claim 13, further comprising receiving third data associated with the endpoint device, wherein the third data includes one or more third data fields that include a third protocol identifier that identifies the one or more third data fields and the device identifier that identifies the endpoint device, wherein the one or more third data fields include one or more of a consumption data field or a tamper data field.

15. A method, comprising:

receiving first data associated with an endpoint device, wherein the first data includes first data fields, wherein the first data fields include a protocol identifier field that includes a protocol value that identifies the first data fields and a device identifier field that identifies the endpoint device;

determining based, at least in part, on the protocol value that a first data field has been excluded from the first data fields of the first data; and

generating a record that identifies that the first data field has been excluded and a value associated with the first data field is unknown.

16. The method of claim 15, further comprising transmitting second data that includes at least the record.

17. The method of claim 15, wherein the first data is a first bubble-up message transmitted by the endpoint device.

18. The method of claim 15, wherein the first data field that has been excluded is a consumption data field and the value is a consumption value associated with the endpoint device.

19. The method of claim 18, further comprising receiving second data associated with the endpoint device, wherein the second data includes one or more second data fields that include a second protocol identifier that identifies the one or more second data fields, the device identifier field that identifies the endpoint device, and the consumption data field.

20. The method of claim 18, wherein the endpoint device is a utility meter.

CLAIMS

What is claimed is:

1. A battery powered device comprising:

a battery;

one or more processors electrically coupled to the battery;

memory storing instructions executable by the one or more processors to perform operations comprising:

generating a first message that includes first data fields, wherein the first data fields include at least an identifier data field that identifies an endpoint device, a protocol identifier data field that includes a first protocol value that identifies the first data fields, and an additional data field that includes a value;

transmitting, at a first time, the first message;

determining that the first message has been received;

determining that a current value of the additional data field is unchanged from the value included within the first message;

generating a second message that includes second data fields, wherein the second data fields include at least the identifier data field that identifies the endpoint device, and the protocol identifier data field that includes a second protocol value that identifies the second data fields included within the second message, wherein the second data fields are a subset of the first data fields, and wherein the second data fields exclude the additional data field corresponding to the current value that is unchanged; and

transmitting, at a second time, the second message.

2. The battery powered device of claim 1, wherein determining that the first message has been received comprises receiving a third message that indicates receipt of the first message by a collection device.

3. The battery powered device of claim 1, wherein the operations further comprise:

receiving a third message from a collection device requesting additional data, wherein the additional data includes a request for an updated value of the value included within the first message and excluded from the second message;

generating a fourth message that includes third data fields, wherein the third data fields include at least the identifier data field that identifies the endpoint device, the protocol identifier data field that includes a third protocol value that identifies the third data fields included within the fourth message, and one or more additional fields that include the additional data; and

transmitting the fourth message.

4. The battery powered device of claim 1, further comprising determining a number of first data fields to include within the first message based, at least in part, on one or more of a time of year, or a time associated with a previous reading of a utility meter.

5. The battery powered device of claim 1, wherein the battery powered device is a utility meter, and wherein the first data fields include a consumption data field that indicates a consumption of the utility meter and a tamper data field that indicates a tampering of a utility meter.

6. The battery powered device of claim 1, wherein the operations further comprise:

determining that the value included within the first message has changed to an updated value;

generating a third message that includes third data fields, wherein the third data fields include at least the identifier data field that identifies the endpoint device, the protocol identifier data field that includes a third protocol value that identifies the third data fields included within the third message, and the additional data field that indicates the updated value; and

transmitting the third message.

7. The battery powered device of claim 1, wherein the operations further comprise adjusting a transmission rate associated with transmitting messages based, at least in part, on one or more criteria.

8. A method, comprising:

receiving first data associated with an endpoint device, wherein the first data includes one or more data fields, wherein the one or more data fields include a protocol identifier that identifies the one or more data fields and a device identifier that identifies the endpoint device;

determining based, at least in part, on the protocol identifier that a first data field has been

excluded from the one or more data fields of the first data;

determining, a value corresponding to the first data field based, at least in part, on a previous transmission of the value;

generating a record containing values associated with the one or more data fields and the value; and

receiving second data associated with the endpoint device, wherein the second data includes one or more second data fields that include a second protocol identifier that identifies the one or more second data fields and the device identifier that identifies the endpoint device, wherein the one or more second data fields include one or more of a consumption data field or a tamper data field.

9. The method of claim 8, wherein the first data is a first bubble-up message transmitted by the endpoint device.

10. The method of claim 8, wherein determining the value comprises one or more of obtaining the value from a data store or requesting the value from another computing device.

11. The method of claim 8, wherein determining the value comprises:

transmitting third data, wherein the third data requests at least the value from another computing device; and

receiving fourth data that includes the value.

12. The method of claim 8, wherein the value is a consumption value associated with the endpoint device.

13. The method of claim 8, further comprising receiving third data associated with the endpoint device, wherein the third data includes one or more third data fields that include a third protocol identifier that identifies the one or more third data fields and the device identifier that identifies the endpoint device, wherein the one or more third data fields includes at least one different data field from the one or more data fields.

14. The method of claim 8, wherein the endpoint device is a utility meter.

15. A method, comprising:

receiving first data associated with an endpoint device, wherein the first data includes first data fields, wherein the first data fields include a protocol identifier field that includes a protocol value that identifies the first data fields and a device identifier field that identifies the endpoint device;

determining based, at least in part, on the protocol value that a first data field has been excluded from the first data fields of the first data; and

generating a record that identifies that the first data field has been excluded and a value associated with the first data field is unknown, wherein the first data field that has been excluded is a consumption data field and the value is a consumption value associated with the endpoint device.

16. The method of claim 15, further comprising transmitting second data that includes at least the record.

17. The method of claim 15, wherein the first data is a first bubble-up message transmitted by the endpoint device.

18. The method of claim 15, wherein the endpoint device is a utility meter.

19. The method of claim 15, wherein the first data is transmitted by the endpoint device.

20. The method of claim 19, further comprising receiving second data associated with the endpoint device, wherein the second data includes one or more second data fields that include a second protocol identifier that identifies the one or more second data fields, the device identifier field that identifies the endpoint device, and the consumption data field.