WHAT IS CLAIMED IS:

1. A method for communicating with a remote device, the method comprising:

using a computer processor and a network interface:

discovering a set of supported application-layer communications protocols of the remote device;

selecting one of the set of supported application-layer communications protocols as a selected application-layer communications protocol for a message received from a source application, based upon a characteristic of a computer network used to communicate with the remote device and a communication characteristic of the source application of the message, wherein the selecting comprises:

detecting the characteristic of the computer network;

determining the communication characteristic of the source application based on a previously-stored communication characteristic or messaging history of the source application, wherein the determining comprises determining the communication characteristic of the source application based on a query of the source application through an application programming interface if the previously-stored communication characteristic or messaging history of the source application is unavailable; and

selecting rows of a database matching the characteristic of the computer network and the communication characteristic of the source application; and

selecting the application-layer communications protocol corresponding to a selected row that has a lowest transmission time;

constructing the message according to the selected application-layer communications protocol; and

transmitting the message to the remote device over the computer network using the selected application-layer communications protocol and the network interface.

2. The method of claim 1, comprising:

receiving a second message for transmission to the remote device from the source application;

selecting one of the set of supported application-layer communications protocols as a second selected application-layer communications protocol for the message based upon a new measurement of the characteristic of the computer network used to communicate with the remote device and the communication characteristic of the source application of the message;

constructing the second message according to the second selected application-layer communications protocol; and

transmitting the message to the remote device over the computer network, wherein the selected application-layer communications protocol used to construct and transmit the message is a different application-layer communications protocol than the second selected application-layer communications protocol used to construct the second message.

3. The method of claim 1, wherein the selected application-layer communications protocol is one of: a HyperText Transfer Protocol (HTTP), a Constrained Application Protocol (CoAP), MQ Telemetry Transport (MQTT) protocol, and an OPC Unified Architecture (UA) protocol.

4. The method of claim 1, wherein discovering the set of supported application-layer communications protocols of the remote device comprises requesting available message brokers from the remote device using a Hypertext Transfer Protocol (HTTP) GET request.

5. The method of claim 1, wherein the characteristic of the computer network is one of: one way latency, two way latency, packet loss, jitter, bandwidth, bit-error rate, error rate, or availability.

6. The method of claim 1, wherein the communication characteristic is one of: one-way latency tolerance, two-way latency tolerance, packet loss tolerance, jitter tolerance, bandwidth requirements, whether an acknowledgement is required, bit-error rate tolerance, error rate tolerances, availability, whether the message needs to be delivered at least once, or whether the message may only be delivered once.

7. The method of claim 1, comprising, updating the database based upon a communication parameter of the transmitted message.

8. A device comprising:

a processor;

a network interface;

a non-transitory machine readable medium, comprising instructions, which when performed by the processor, cause the processor to:

discover a set of supported application-layer communications protocols of a remote device;

select one of the set of supported application-layer communications protocols as a selected application-layer communications protocol for a message received from a source application, based upon a characteristic of a computer network used to communicate with the remote device and a communication characteristic of the source application of the message;

construct the message according to the selected application-layer communications protocol; and

transmit the message to the remote device over the computer network using the selected application-layer communications protocol and the network interface,

wherein the instructions that cause the processor to select one of the set of supported application-layer communications protocols of the remote device as the selected application-layer communications protocol based upon the characteristic of the network used to communicate with the remote device and the communication characteristic of the source application comprises the instructions to cause the processor to:

detect the characteristic of the computer network;

determine the communication characteristic of the source application based on a previously-stored communication characteristic or messaging history of the source application, wherein the determination comprises determining the communication characteristic of the source application based on a query of the source application through an application programming interface if the previously-stored communication characteristic or messaging history of the source application is unavailable; and

select rows of a database matching the characteristic of the computer network and the communication characteristic of the source application; and

select the application-layer communications protocol corresponding to a selected row that has a lowest transmission time.

9. The device of claim 8, wherein the instructions comprise instructions to cause the processor to:

receive a second message for transmission to the remote device from the source application;

select one of the set of supported application-layer communications protocols as a second selected application-layer communications protocol for the message based upon a new measurement of the characteristic of the computer network used to communicate with the remote device and the communication characteristic of the source application of the message;

construct the second message according to the second selected application-layer communications protocol; and

transmit the message to the remote device over the computer network, wherein the selected application-layer communications protocol used to construct and transmit the message is a different application-layer communications protocol than the second selected application-layer communications protocol used to construct the second message.

10. The device of claim 8, wherein the selected application-layer communications protocol is one of: a HyperText Transfer Protocol (HTTP), a Constrained Application Protocol (CoAP), MQ Telemetry Transport (MQTT) protocol, and an OPC Unified Architecture (UA) protocol.

11. The device of claim 8, wherein the instructions that cause the processor to discover the set of supported application-layer communications protocols of the remote device comprises instructions to cause the processor to: request available message brokers from the remote device using a Hypertext Transfer Protocol (HTTP) GET request.

12. The device of claim 8, wherein the characteristic of the computer network is one of: one way latency, two way latency, packet loss, jitter, bandwidth, bit-error rate, error rate, or availability.

13. The device of claim 8, wherein the communication characteristic is one of: one-way latency tolerance, two-way latency tolerance, packet loss tolerance, jitter tolerance, bandwidth requirements, whether an acknowledgement is required, bit-error rate tolerance, error rate tolerances, availability, whether the message needs to be delivered at least once, or whether the message may only be delivered once.

14. The device of claim 8, wherein the instructions comprise instructions to cause the processor to: update the database based upon a communication parameter of the transmitted message.

15. A non-transitory machine readable medium, comprising instructions, which when performed by a processor, cause the processor to:

discover a set of supported application-layer communications protocols of a remote device;

select one of the set of supported application-layer communications protocols as a selected application-layer communications protocol for a message received from a source application, based upon a characteristic of a computer network used to communicate with the remote device and a communication characteristic of the source application of the message;

construct the message according to the selected application-layer communications protocol; and

transmit the message to the remote device over the computer network using the selected application-layer communications protocol,

wherein the instructions which when performed by the machine, cause the machine to select one of the set of supported application-layer communications protocols of the remote device as the selected application-layer communications protocol based upon the characteristic of the network used to communicate with the remote device and the communication characteristic of the source application comprises the instructions to cause the machine to:

detect the characteristic of the computer network;

determine the communication characteristic of the source application based on a previously-stored communication characteristic or messaging history of the source application, wherein the determination comprises determining the communication characteristic of the source application based on a query of the source application through an application programming interface if the previously-stored communication characteristic or messaging history of the source application is unavailable; and

select rows of a database matching the characteristic of the computer network and the communication characteristic of the source application; and

select the application-layer communications protocol corresponding to a selected row that has a lowest transmission time.

16. The non-transitory machine readable medium of claim 15, wherein the instructions comprise instructions to cause the processor to:

receive a second message for transmission to the remote device from the source application;

select one of the set of supported application-layer communications protocols as a second selected application-layer communications protocol for the message based upon a new measurement of the characteristic of the computer network used to communicate with the remote device and the communication characteristic of the source application of the message;

construct the second message according to the second selected application-layer communications protocol; and

transmit the message to the remote device over the computer network, wherein the selected application-layer communications protocol used to construct and transmit the message is a different application-layer communications protocol than the second selected application-layer communications protocol used to construct the second message.

17. The non-transitory machine readable medium of claim 15, wherein the selected application-layer communications protocol is one of: a HyperText Transfer Protocol (HTTP), a Constrained Application Protocol (CoAP), MQ Telemetry Transport (MQTT) protocol, and an OPC Unified Architecture (UA) protocol.

18. The non-transitory machine readable medium of claim 15, wherein the instructions that cause the processor to discover the set of supported application-layer communications protocols of the remote device comprises instructions to cause the processor to: requesting available message brokers from the remote device using a Hypertext Transfer Protocol (HTTP) GET request.