CLAIMS:

1. A method of determining network performance of one or more metering devices in data communication with a root node, the one or more metering devices configured to measure consumption of a utility, the method comprising:

exchanging messages between the root node and the one or more metering devices, wherein exchanging messages comprises the transmission of messages from the root node and to the one or more metering devices and the receipt of messages by the root node and from the one or more metering devices;

storing, in a live log memory of the root node, log entries indicative of the messages exchanged between the root node and the one or more metering devices;

continuously copying the log entries stored in the live log memory to a back-up log memory of the root node, when the log entries stored in the live log memory reach a storage threshold, wherein any previously stored log entries in the back-up log memory are overwritten by the copying;

deleting the log entries stored in the live log memory once they have been copied to the back-up log memory;

continuously determining, using the log entries stored in the back-up log memory, after the log entries have been copied to the back-up log memory and before the log entries in the back-up log memory are overwritten, a frequency of messages exchanged between the root node and the one or more metering devices;

continuously storing, in a performance summary memory of the root node, data indicative of the determined frequency of messages exchanged between the root node and the one or more metering devices; and

based on the data indicative of the frequency of messages, determining whether one or more of the metering devices are experiencing network performance issues.

2. A method according to claim 1, wherein determining whether one or more of the metering devices are experiencing network performance issues comprises:

comparing the data indicative of the frequency of messages exchanged between the root node and the one or more metering devices to a predicted message threshold indicative of a frequency of messages expected to be exchanged between the root node and the one or more metering devices; and

determining that a network performance issue exists if the frequency of messages exchanged between the root node and the one or more metering devices falls outside of the predicted message threshold.

3. A method according to claim 2, further comprising:

transmitting, by a transmitter of the root node and to an external device, an alert indicating that there is a network performance issue if it is determined that a network performance issue exists.

4. A method according to any preceding claim, wherein the performance summary memory comprises, for each of the one or more metering devices, a performance profile comprising an indication of the frequency of messages exchanged between a respective metering device and the root node.

5. A method according to claim 4, further comprising:

for each metering device, comparing the frequency of messages exchanged between the respective metering device and the root node to a respective predicted message threshold indicating the frequency of messages expected to be exchanged between the respective metering device and the root node, and

for each metering device, determining that a network performance issue exists if the frequency of messages exchanged between the respective metering device and the root node falls outside of the respective predicted message threshold.

6. A method according to any preceding claim, wherein the messages comprise a message type of one or more of: a network maintenance message, an authentication message and an application message.

7. A method according to any preceding claim, further comprising:

extracting a subset of the log entries stored within the back-up log memory according to parameters contained in a configuration file; and

storing the subset of log entries in a performance data memory of the root node.

8. A method according to claim 7, when dependent directly or indirectly on claim 2, wherein the log entries are extracted from the back-up log memory and stored in the performance data memory in dependence on a determination that a network performance issue exists.

9. A method according to claim 7 or 8, further comprising transmitting the extracted subset of log entries to an external device.

10. A method according to any of claims 7 to 9, when dependent directly or indirectly on claim 6, wherein extracting the subset of log entries comprises:

searching the back-up log memory for log entries associated with messages of at least one message type, the at least one message type defined by the configuration file; and

extracting, from the back-up log memory, one or more log entries associated with the at least one message type.

11. A method according to claim 10, further comprising:

extracting, a predetermined number of log entries from the back-up log memory logged before and/or after the one or more log entries associated with the at least one message type, the predetermined number of log entries defined by the configuration file; and

storing, within the performance data memory, the predetermined number of log entries.

12. A method according to claim 11, wherein the predetermined number of log entries comprise log entries comprising a timestamp immediately before and/or after the timestamp of the extracted one or more log entries associated with the at least one message type.

13. A method according to any of claims 10 to 12, wherein the configuration file defines a search string indicating the one or more message types to be extracted.

14. A method according to claim 13, wherein the search string identifies a specific one of the one or more metering devices, such that the one or more message types to be extracted relate to messages received from the specific one of the one or more metering devices.

15. A method according to any of claims 7 to 14, further comprising:

updating the configuration file to define a different subset of log entries to be extracted from the back-up log memory; and

applying the updated configuration file to the root node such that the different subset of log entries are extracted from the back-up log memory;

optionally comprising storing, in the performance data memory, the different extracted subset of log entries, and transmitting the extracted subset of log entries to an external device.