



# Chipkin Xpath – Command &/or Read your Building System

**Want to command BMS and automation systems using XML ?**

**Want to read BMS data and insert it into an XML packet ?**

**Chipkin’s Xpath drivers allow you to do both.**

Xpath provides a method for drilling into an XML packet and targeting a particular element. Our gateways allow you to map that particular element onto another protocol such as BACnet. Using the passiveXpath driver, we extract elements (selected by configuration) and store the values in a table of values shared by all the protocols. And then the other protocol writes the value to the field devices such as heating and cooling systems. The clientXpath allows you to poll for the XML packet at a configured URL. It then does element selection using the Xpath configuration.

All Data made available using any of our 140+ protocols can be served to your application using XML and Json.

```

<?xml version='1.0' encoding='utf-8' ?>
<?xml-stylesheet href="latest_ob.xsl" type="text/xsl"?>
<current_observation version="1.0"
  xmlns:xsd="http://www.w3.org/2001/XMLSchema"
  xmlns:xsi="http://www.w3.org/2001/XMLSchema-instance"
  xsi:noNamespaceSchemaLocation="http://www.weather.gov/view/current_observation.xsd"
  <credit>NOAA's National Weather Service</credit>
  <credit_URL>http://weather.gov/</credit_URL>
  <image>
    <url>http://weather.gov/images/xml_logo.gif</url>
    <title>NOAA's National Weather Service</title>
    <link>http://weather.gov/</link>
  </image>
  <suggested_pickup>15 minutes after the hour</suggested_pickup>
  <suggested_pickup_period>60</suggested_pickup_period>
  <location>Ak-Chin Regional Airport, AZ</location>
  <station_id>KA39</station_id>
  <latitude>32.99</latitude>
  <longitude>-111.91833</longitude>
  <observation_time>Last Updated on Feb 4 2021, 11:00 am MST</observation_time>
  <observation_time_rfc822>Thu, 04 Feb 2021 11:00:00 -0700</observation_time_rfc822>
  <weather>Mostly Cloudy</weather>
  <temperature_string>68.0 F (20.0 C)</temperature_string>
  <temp_f>68.0</temp_f>
  <temp_c>20.0</temp_c>
  <relative_humidity>26</relative_humidity>
  <wind_string>West at 9.2 MPH (8 KT)</wind_string>
  <wind_dir>West</wind_dir>
  <wind_deg>270</wind_deg>
  <wind_mph>9.2</wind_mph>
  <wind_kt>8</wind_kt>
  <pressure>30.0</pressure>
  <dewpoint_string>32.0 (0.0 C)</dewpoint_string>
  <dewpoint_f>32.0</dewpoint_f>
  <dewpoint_c>0.0</dewpoint_c>
  <visibility>10</visibility_mi>
  <icon_url_base>http://forecast.weather.gov/images/wtf/small/</icon_url_base>
  <two_day_history_url>http://www.weather.gov/data/obhistory/KA39.html</two_day_history_url>
  <icon_url_name>bkn.png</icon_url_name>
  <ob_url>http://www.weather.gov/data/METAR/KA39.1.txt</ob_url>
  <disclaimer_url>http://weather.gov/disclaimer.html</disclaimer_url>
  <copyright_url>http://weather.gov/disclaimer.html</copyright_url>
  <privacy_policy_url>http://weather.gov/notice.html</privacy_policy_url>
</current_observation>

```

### XML Packet



eg. BACnet Ao(1)  
Modbus 40001

**Xpath allows you to drill  
into a particular  
element**

**Driver maps element  
onto other protocol**

```

<temp_c>20.0</temp_c>
<relative_humidity>26</relative_humidity>

```

## The Challenges

Most of systems can produce and consume XML formatted data. Not so with Building and Factory Automation Systems. How do you connect these XML systems to the controllers and sensors used to implement the automation?

## The Solution

Chipkin developed 2 drivers. A client and a server version.

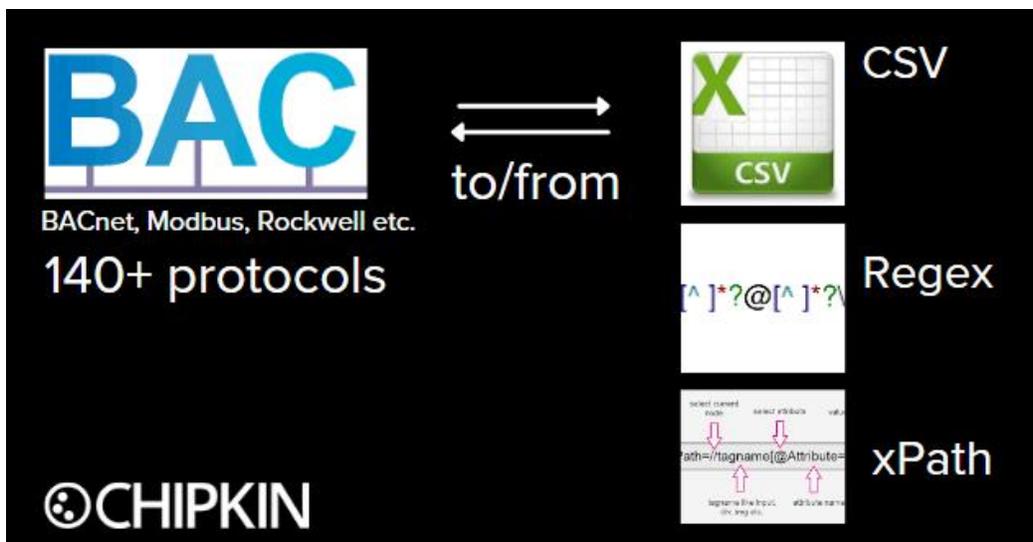
The server solution accepts incoming XML packets and using the configuration, extracts value and maps those values onto data objects in the Automation System. The extraction location in the XML is specified when you configured the passiveXpath driver.

The Client Solution gets data from the Automation Systems and inserts it into an XML packet. The insertion location is specified by the configuration of the driver.

Our gateways support over 140 protocols like BACnet, JCI, Modbus, GE, Rockwell, Fire Systems, HVC systems and many more. Now any / many can be connected to XML system using the Xpath drivers.

## Bonus

The Xpath drivers support Xpath, Regular Expressions and Json formatted packets.



## **About Chipkin**

Chipkin Automation develops protocol drivers. Some are sold and supported by MSA. Some are sold and supported by Chipkin. Chipkin are data communication specialists with 20+ years of experience. The OPC UA driver will be sold and supported by both MSA and Chipkin.

## **Keywords**

See product release plan for list of keywords.