Envision Quick Start Guide
1 Overview

ENVISION™ enterprise solution helps companies to optimize automation processes, minimize unnecessary maintenance, and increase production throughput. In the scope of process diagnostics and quality management, ENVISION’s patented technology is a quantum leap beyond traditional motion sensing diagnostics tools.

Whereas existing diagnostic tools use vibration sensors or other signals, ENVISION™ creates digital traces of all sets of events pertaining to the automated or manufacturing processes.

Envision solution LISTENS to the rhythm of machine and automated operations; ILLUMINATES untapped and currently invisible process data to pinpoint possible problem areas before a critical failure; and TRANSFORMS how systems’ operational and quality performance is measured and managed.

CAPTURING THE HEARTBEAT OF AUTOMATION™: ENVISION™ monitors and records every automated motion and process in real-time. ENVISION™ actually acts as an EKG of an automated system - comparing the actual process performance against ideal (design intended) cycle time to gauge the health of the system.

Beet Analytics Technology brings the power of digital technology and advanced knowledge of factory automation together, creating a powerful Automation Intelligent System, ENVISION™. ENVISION™ demystifies the industrial operations by digitizing each automated process down to every minute detail and presents it in a simple and intuitive way. ENVISION enables true Preventive Maintenance to minimize downtime, improve production throughput, and achieve faster problem solving.

ENVISION™ creates a competitive advantage by addressing key operational challenges including:

- Provides accurate real-time and historical machine and process performances information to the right user at the right time.
- Enables proactive preventive maintenance by highlighting potential problem areas and providing prioritized list of “Hotspots” in the manufacturing and automation processes.
- Enables all users to monitor and analyze the system performance anywhere via web.
- Delivers high Return-on-Investment by increasing throughput, reducing machine downtime and achieving faster root-cause analysis.
2 System Requirements

Supported Operating Systems

- FactorySMART and Envision Data Collectors
  - Windows Server 2008 R2 (64bit)
  - SQL Server 2008 R2 (64bit) installed and active
  - Windows IIS Web Services installed and active
- System Scope
  - Windows Vista (32bit or 64bit)
  - Windows 7 (32bit or 64bit)
  - Windows 8 (32bit or 64bit)

.NET Framework Version

.NET Framework 4.0 is required in order to install and use Envision. The .NET framework is installed automatically by the Envision setup if it is not already installed.

Windows User Access Control (UAC)

The UAC (User Account Control) is a security component of the Microsoft Windows Vista operating system and above. The UAC must be disabled to install Envision Data Collector or System Scope.

If UAC is enabled, the installer will disable it and force a reboot to continue the install.

Hardware Requirements

- FactorySMART
  - Intel Xeon Dual Core
  - 16GB of Memory
  - At least 200GB of Fiber Channel Hard Drive (SAN highly recommended)
- Envision Data Collector
  - i5-2500K or better CPU processor
  - 2GB Memory required (4GB recommended)
- System Scope
  - i5-2500K or better CPU processor
  - 4GB Memory required (8GB or better highly recommended)
  - Display at least 1024 x 768 with 16-bit color or higher
  - 20GB free hard disk space (SSD highly recommended)

Recommended Browsers

- Google Chrome (current stable release) (Highly Recommended)
- Mozilla Firefox (current stable release)

Officially Supported Browsers
- Google Chrome
- Mozilla Firefox 16 or higher
- Internet Explorer 8 or higher (recommended version 9 or higher)
  - With limited functionality.

**Installer Requirements**

- Administrator user rights are required to install Envision
- FactorySMART requires SQL Server Admin rights during installation of database
- A local windows user account with local administrator rights is required to facilitate Envision Application Server (EAS) and Envision Data Collector (EDC) communication(s)
  - This account "envisionService" will be created by installer
- Server will require internet access to validate license when applied.
3 Installation

3.1 FactorySMART Installation

To successfully install Envision FactorySMART you will need the following:

- Latest version of Envision System Scope setup application
- Your license XML file

**Installation Steps**

Locate Envision FactorySMART setup application on disc provided or you can download from Beet Analytics Technology [website](#). Double click executable, select language for installation dialogs only. Default language is English.

![Select Setup Language](image1)

Click OK when ready to continue.

![License Agreement](image2)

Read and accept Beet Analytics Technology software license agreement, and click next.

⚠️ **IMPORTANT!** Do not install this SOFTWARE before you have read this license agreement. By proceeding to install this SOFTWARE you are indicating your acceptance of all the terms and conditions stated in this agreement.
Select Destination Location and select next. Destination Location is where the actual Web Application files are being installed.

If you have already installed FactorySMART once before on this server, you will not see this dialog.
Select which components should be installed. Once components are selected select next.

<table>
<thead>
<tr>
<th>Component</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete Install</td>
<td>Installs both Envision Web Application and Database on same server.</td>
</tr>
<tr>
<td>Envision Web Application Only</td>
<td>Installs only Web Application. Must be installed directly on server with Windows IIS Web Server already installed. Web Application is installed as virtual folder &quot;Envision&quot; under &quot;Default Web Site&quot;.</td>
</tr>
<tr>
<td>Envision Database Only</td>
<td>Installs only Database. SQL Server Database application must already be installed and configured. Database Server can be a remote but you will need &quot;sa&quot; Access to the SQL Server to complete this install. You can Create Database in advance. If no Database is created, installer will create one for you storing data in C:\dbData.</td>
</tr>
</tbody>
</table>

Envision FactorySMART installer allows for Web Application and Database to be on separate servers. This allows you to utilize a SQL Server cluster if you have one.

If installing "Complete Install" or "Envision Web Application Only", you must be running this installer on the Windows IIS Web server directly.

Select Start Menu Folder and select next. Links to EULA and uninstaller Icon are added here.

If you have already installed FactorySMART once before on this server, you will not see this dialog.
Enter Data Connection Information and select next. Connection will be attempted to validate before installer will continue.

You will see this dialog ONLY if you have selected Components "Complete Install" or "Envision Database Only".

<table>
<thead>
<tr>
<th>Field Name</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Server</td>
<td>Server Name or IP address used to connect to SQL Server to install database schema.</td>
</tr>
<tr>
<td>Database Name</td>
<td>Name of database to create (Default: Envision). If Database all ready exists, you can enter existing name. If database name does not exist it will be created.</td>
</tr>
<tr>
<td>User Name</td>
<td>SQL Server System Admin rights. (Default: sa). This user must have SQL Server Admin rights not just owner of database. SQL Job Agents are being installed.</td>
</tr>
<tr>
<td>Password</td>
<td>Password for User Name entered above. This password is not save or stored anywhere but in memory during this install.</td>
</tr>
</tbody>
</table>

Database connection is attempted at this point to validate information entered. Possible errors are:

- Leaving password entry blank.
- Unable to validate connection to database server provided. If unable to resolve this you may to contact your Database System Administrator.
Select tasks and press next.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Envision Web Application</td>
<td>If task is selected, Envision Application database will be created with initial size selected. If database already exists, creation is skipped. Error will occur if database does not exist and you will be returned to this dialog. This task is selected only on first time install of FactorySMART by default.</td>
</tr>
<tr>
<td>Create Datalogger Database</td>
<td>If task is selected, Envision Data Logger database will be created. If database already exists, creation is skipped. Error will occur if database does not exist and you will be returned to this dialog. This task is selected only on first time install of FactorySMART by default.</td>
</tr>
<tr>
<td>Create Envision System Scope Service Account</td>
<td>This task creates a local Windows Account &quot;envisionService&quot; with local administrator rights. This account is required and used to communicate between Application Server and Data Collector Servers. This task is selected only on first time install of FactorySMART by default.</td>
</tr>
<tr>
<td>Re-Initialize Default Configuration Settings</td>
<td>If task is selected, Envision default configuration parameters will be applied overwriting any user specific settings. This task is selected only on first time install of FactorySMART by default.</td>
</tr>
</tbody>
</table>
Ready to install, verify settings and options selected, select Install to execute installation.

**Apply License to FactorySMART**

Once Database and Web Application are installed, you can access FactorySMART via the web to install license.

**License XML File**

You should receive an License XML file from your Beet account representative, if you did not please contact them. You will no be able to use Envision FactorySMART without apply a license.

**Example License XML File**

This is your license file for the product you purchased. Please keep it in a safe place.
Copy and paste the entire content between "#" line, do not include "#" itself.

```
<?xml version="1.0" encoding="utf-8" standalone="yes"?><EnvisionLicensing>
  <Modules>
    <Module>
      <Name>******PRODUCT_NAME******</Name>
      <Activation key="XXXXX-XXXXX-ACTIVATION_KEY-XXXXX-XXXXXXXXX"/>
    </Module>
  </Modules>
</EnvisionLicensing>
```

----------- Do not include this, copy entire contents above
Launch Envision FactorySMART

Open browser from any computer with access to Web Application server where envision was installed. (Highly recommended browser is Google Chrome).

To Access Envision FactorySMART use http://<serverName>/Envision/Home

Copy and Paste License from file.

⚠️ Only copy portion of file indicated. Server will need internet access to validate license.
Press Submit. Via internet FactorySMART will contact Beet’s license server to validate. Once validated you can login and other users can register for accounts.
Initial Envision Administrator login is:

- **User name:** admin
- **Password:** envisionAdmin

### 3.1.1 System Scope Installation

To successfully install Envision System Scope you will need the following:
- Latest version of Envision System Scope setup application
- Your license XML file

**Installation Steps**

Locate Envision System Scope setup application on disc provided or you can download from Beet Analytics Technology [website](#). Double click executable, select language for installation dialogs only. Default language is English.
Click OK when ready to continue.

Read and accept Beet Analytics Technology software license agreement, and click next.

⚠️ IMPORTANT! Do not install this SOFTWARE before you have read this license agreement. By proceeding to install this SOFTWARE you are indicating your acceptance of all the terms and conditions stated in this agreement.
Select Destination Location and select next. Destination Location is where the actual Web Application files are being installed.

If you have already installed System Scope once before on this computer, you will not see this dialog.
Select Start Menu Folder and select next.

If you have already installed System Scope once before on this computer, you will not see this dialog.
Enter desired listening port for Envision System Scope Web Application (Default: 7780). We recommend leaving the default and not using standard HTTP Port as it may conflict with other applications running on your computer. Click next when ready to continue.

⚠️ If you don’t understand what this is for, please don’t change the default without discussing with your Windows Administrator or IT Support.
Select tasks and press next.

<table>
<thead>
<tr>
<th>Task</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Run Kepware License Manager</td>
<td>This task will launch Kepware License Manager after System Scope installation is complete to allow you to apply your Kepware license. This task is selected only on first time install of System Scope by default.</td>
</tr>
<tr>
<td>Create Envision System Scope Service Account</td>
<td>This task creates a local Windows Account &quot;envisionService&quot; with local administrator rights. This account is required and used to communicate between Application Server and Data Collector Servers. This task is selected only on first time install of System Scope by default.</td>
</tr>
<tr>
<td>Force re-install of Envision Data Collector</td>
<td>Envision System Scope installer will only install Envision Data Collector if not installed or new version is available. Select this task, will force the re-install of the Data Collector.</td>
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<tr>
<td>Re-Initialize Default Configuration Settings</td>
<td>If task is selected, Envision default configuration parameters will be applied overwriting any user specific settings. This task is selected only on first time install of System Scope by default.</td>
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Ready to install, verify settings and options selected, select Install to execute installation.

Apply License to System Scope
Once System Scope is installed, you need to launch application to apply license.

License XML File
You should receive an License XML file from your Beet account representative, if you did not please contact them. You will no be able to use Envision System Scope without apply a license.

Example License XML File
This is your license file for the product you purchased.
Please keep it in a safe place.
Copy and paste the entire content between "#" line, do not include "#" itself.

<?xml version="1.0" encoding="utf-8" standalone="yes"?>
<EnvisionLicensing>
  <Modules>
    <Module>
      <Name>******PRODUCT_NAME******</Name>
      <Activation key="XXXXX-XXXXX-ACTIVATION_KEY-XXXXX-XXXXXXXX">
      </Activation>
    </Module>
  </Modules>
</EnvisionLicensing>
Launch Envision System Scope

To launch Envision System Scope go to START → All Programs → Beet Analytics Technology → Envision System Scope → Envision System Scope

This is the default Start Menu path for Envision System Scope, if you selected a different Start Menu Folder use Folder you selected during install.

The following dialog appears

While this dialog is visible System Scope services are activating, this process could take a few minutes depending on the hardware you are using for System Scope. The initial startup will take longer, please beware of this.

Once System Scope is running for the first time you need to apply your license.
Copy and Paste License from file.

⚠️ Only copy portion of file indicated. Computer will need internet access to validate license.
Press Submit. Via internet System Scope will contact Beet's license server to validate. Once validated System Scope application will launch.
Only while System Scope is running and this window remains open is when data collection occurs. Closing this System Scope window will shut down all Services.

To shutdown and exit System Scope simply close this web browser window which is running System Scope application. Once window closes, System Scope services are shutdown.
3.2 System Scope Installation

To successfully install Envision System Scope you will need the following:
- Latest version of Envision System Scope setup application
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  <Modules>
    <Module>
      <Name>******PRODUCT_NAME******</Name>
      <Activation key="XXXXX-XXXXX-ACTIVATION_KEY-XXXXX-XXXXXXXX">
      </Activation>
    </Module>
  </Modules>
</EnvisionLicensing>
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Launch Envision System Scope
To launch Envision System Scope go to START → All Programs → Beet Analytics Technology → Envision System Scope → Envision System Scope

This is the default Start Menu path for Envision System Scope, if you selected a different Start Menu Folder use Folder you selected during install.

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Press Submit. Via internet System Scope will contact Beet's license server to validate. Once validated System Scope application will launch.
Only while System Scope is running and this window remains open is when data collection occurs. Closing this System Scope window will shut down all Services.

To shutdown and exit System Scope simply close this web browser window which is running System Scope application. Once window closes, System Scope services are shutdown.
4 Registration

Registration does not apply to Envision System Scope.

Overview

You must have an Envision user account to access the Envision FactorySMART system. If you don't have an account, you can register an account. An Envision Administrator must approve and activate your account before it can be used.

Actions

Access the Envision System via web site, as your administrator if you don't know the web site address.

Click on the "Register" link to begin the account registration process.
_passwords are required to be a minimum of 6 characters in length.

User name

Email address

Password

Confirm password

Register

Complete the form... See the following example.
Passwords are required to be a minimum of 6 characters in length.

Once form is complete, click "Register".
Registration process is complete, once your Envision administrator approves your request you will have access to the Envision system.

You are an un-approved user. Once you are approved by an Envision administrator you will receive an email with instructions.

Thank You

Return to login
5 Getting Started

Overview

Here is the default screen once login the ENVISION system. It shows you the overall status of your factory.

![Envision Default Plant](image)

Navigation

Here is a quick overview of the control available on the top left corner of the default screen.

<table>
<thead>
<tr>
<th>Object</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Objects</td>
<td>Shown (minimized) the object tree windows that shows the overall factory structure in a tree view. The image below shows you the effect of this control.</td>
</tr>
<tr>
<td>Dashboard</td>
<td>The Dashboard module of the ENVISION software. Not available in the ENVISION System Scope.</td>
</tr>
<tr>
<td>Heartbeat</td>
<td>The Cycle Browser module of the ENVISION software.</td>
</tr>
<tr>
<td>Hotspots ('Asset' in the on-line documentation)</td>
<td>The Hotspots module of the ENVISION software. Not available in the ENVISION System Scope.</td>
</tr>
<tr>
<td>Note ('Group' in the on-line documentation)</td>
<td>The Notepad module of the ENVISION software. Not available in the ENVISION System Scope.</td>
</tr>
</tbody>
</table>
Reports

The Report module of the ENVISION software. Not available in the ENVISION System Scope.

Here is a quick overview of the controls available on the top right corner of the default screen.

<table>
<thead>
<tr>
<th>Object</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admin</td>
<td>The Administrator menu option. You must be granted &quot;Administrator&quot; role to see this menu option.</td>
</tr>
<tr>
<td>User</td>
<td>The User menu option.</td>
</tr>
<tr>
<td>Help</td>
<td>The help menu option.</td>
</tr>
<tr>
<td>'Asset' in the on-line documentation</td>
<td>The Configure Metrics button allows you to edit the list of displayed metrics in the object tiles. Only enabled for the system administrators.</td>
</tr>
<tr>
<td>'Group' in the on-line documentation</td>
<td>Lock/Unlock the layout in the Dashboard module for edit. Only enabled for the system administrators.</td>
</tr>
</tbody>
</table>

Object Tile

The dashboard view of the factory is made of individual object tile. Each object tile represents an area, line, or station in the factory. The list of metrics displayed in the object tile is setup by the system administrators. You can click on the "Light Blue" metrics for more detailed report regarding the selected metric.

<table>
<thead>
<tr>
<th>Object</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>L</td>
<td>Last shift</td>
</tr>
<tr>
<td>C</td>
<td>Current shift</td>
</tr>
</tbody>
</table>

Color Schema in ENVISION
Color has very special meaning in ENVISION. Here we list the meaning of different color in ENVISION.

<table>
<thead>
<tr>
<th>Color</th>
<th>Usage</th>
<th>Color</th>
<th>Usage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Normal, Optimum Performance Range</td>
<td>5</td>
<td>Missing Data due to Stoppage or Missing Input/Output</td>
</tr>
<tr>
<td>2</td>
<td>Watch, Not Optimum but Within Defined tolerance window</td>
<td>6</td>
<td>Design Time Line Color, The Optimum Value.</td>
</tr>
<tr>
<td>3</td>
<td>Warning, Outside Defined Tolerance Window</td>
<td>7</td>
<td>Object is inactive or actual cycle length is zero</td>
</tr>
<tr>
<td>4</td>
<td>Fault</td>
<td>8</td>
<td>Selected Object or Cycle</td>
</tr>
</tbody>
</table>
6 Product Support

**Standard Support**
Every licensed Envision user is entitled to:
- 60 days free email based product support
  - support@beetllc.com
- Unlimited access to the on-line support materials available at Beet Analytics Technology support web site
  - http://support.beetllc.com
- Critical bug fix updates for the version of software purchased

**Service Maintenance Level Support**
Every licensed user who holds an active service maintenance contract for Envision is entitled to:
- Unlimited email based support for the duration of the subscription license
  - support@beetllc.com
- Unlimited access to the on-line support materials available at Beet Analytics Technology support web site
  - http://support.beetllc.com
- Critical bug fix updates for the version of software purchased
- Product enhancement updates for the duration of the service maintenance contract

**Submitting Suggestions and Reporting Issues**
If you wish to make a suggestion or report an issue you have discovered using Envision, you can do so using our support web site. Alternatively, you can email Beet Analytics Technology Support at support@beetllc.com

The amount of information you can provide us with about the nature of a problem you are having will directly affect our ability to resolve it. The more information you can provide about your environment, the steps to reproduce and any other relevant information the better - please be verbose!