Bonding and Virtual LAN Feature Description

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Bonding and Virtual LAN

Feature Description

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1 Introduction

LoadMaster bonding/Virtual LAN (VLAN) tagging can be easily set up and configured using the LoadMaster Web User Interface (WUI). Successful deployment requires that the pre-requisites have been satisfied. This guide is designed to introduce interface bonding and VLAN configuration on the LoadMaster. Bonding support is available with all network modules.

1.1 Prerequisites

The switch being used must be compatible with:

- VLAN tagging
  - IEEE 802.1Q
- Bonding/teaming (802.3ad/Active-Backup)
  - IEEE 802.1AX/IEEE 802.3ad/LACP

1.1.1 Switch Configuration

Enabling the Active-Backup mode generally does not require switch intervention and can be configured directly on the LoadMaster. Using the 802.3ad bonding mode will require configuring a link aggregation group on the switch in conjunction with the LoadMaster. Please read your switch documentation to establish the corresponding team/bond. Common terms for link aggregation include "Ethernet trunk", "NIC teaming", "port channel", "port teaming", "port trunking", "link bundling", "EtherChannel", "Multi-Link Trunking (MLT)", "NIC bonding", "Network Fault Tolerance (NFT)" and “LAG”.

When enabling VLAN trunking on the switch port, make sure to configure the port to support the appropriate mode; General; Access or Trunking. Descriptions are as follows, but please check your switch documentation for specifics:

- General — The port belongs to VLANs, and each VLAN is user-defined as tagged or untagged (full 802.1Q mode)
- Access — The port belongs to a single untagged VLAN
- Trunk — The port belongs to VLANs in which all ports are tagged

1.2 Intended Audience

This document is intended to be read by anyone, specifically network administrators, who have an interest in finding out about bonding and VLAN configuration on the LoadMaster.
2 Bonding/Teaming (802.3ad/Active-Backup)

There are a few key points to keep in mind when creating bonds/teams:

- You can only bond interfaces higher than the parent. For example, if you start with port 10 you can only add ports 11 and greater.
- When using a Virtual LoadMaster (VLM), all NICs must be added prior to configuring bonding or adding VLANs. If a new NIC is needed you must remove the bond and/or remove the VLANs.
- If VLAN tagging is required, bond the links first and then add VLANs after the bond has been configured.
- Bonding interfaces 0 and 1 is not permitted.
- In order to add a link to a bonded interface, any IP addressing must first be removed from the link to be added.
- Enabling the Active-Backup mode generally does not require switch intervention.
- The 802.3ad mode is an active-active setup.
- Ensure that all bonded interfaces are configured for the same link speed, both on the switch and the LoadMaster.
- If you want to bond port 0, you should strongly consider moving the web administrative interface and/or the remote SSH access to a different port temporarily until that bonding has been completely configured.

2.1 Creating a Bond/Team

To create a bond/team, follow the steps below:

1. In the main menu of the WUI, navigate to System Configuration > Interfaces.
2. Click the link for the relevant interface.
3. Click the Interface Bonding button.
4. Click Create a bonded interface.
5. Click OK.
6. Click OK again.
7. Click **Continue**.
8. In the main menu, select **System Configuration** > **Interfaces** and click the **bnd** link.

<table>
<thead>
<tr>
<th>Network Interface</th>
<th>Bonded Interface (bnd)</th>
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<tbody>
<tr>
<td>Interface Address (address/prefix)</td>
<td>10.11.1.193/24</td>
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<tr>
<td>Additional addresses (address/prefix)</td>
<td>Add Address</td>
</tr>
<tr>
<td>VLan Configuration</td>
<td>Bonding Devices</td>
</tr>
</tbody>
</table>

**Figure 2-3: Continue**

9. Click **Bonded Devices**.

<table>
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<th>Bonding mode</th>
<th>012 bnd</th>
<th>Add Link</th>
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</thead>
<tbody>
<tr>
<td>Unbind the interface</td>
<td>eth1 Add Link</td>
<td></td>
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</table>

**Figure 2-4: Bonded Interface**

10. Select the relevant interface and click **Add Link**.

### 2.2 Removing a Bond/Team

To remove a bond/team, follow the steps below:

1. In the main menu of the LoadMaster WUI, select **System Configuration** and **Interfaces**.
2. Select the bond to be removed.

<table>
<thead>
<tr>
<th>Network Interface</th>
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<tbody>
<tr>
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<td>Add Address</td>
</tr>
<tr>
<td>VLan Configuration</td>
<td>Bonding Devices</td>
</tr>
</tbody>
</table>

**Figure 2-6: Bonded Interface**

3. Click the **Bonded Devices** button.
4. Un-bind each port by clicking the **Unbind Port** button. Repeat this until all ports are removed from the bond.
5. Once all of the child ports have been un-bonded, the parent port can be unbonded by clicking **Unbond this interface**.

**Deleted bonding support from Interface**

**Figure 2-7: Continue**

6. Click **Continue**.
3 VLAN Tagging

Things to keep in mind:

- Configure VLAN tagging on the switch first, if required
- Start by deciding if you need bonding. If you do, first establish the bonded configuration. Then, proceed by adding the VLAN tagging information.
- VLANs can be added to physical interfaces or bonded interfaces

3.1 Add a VLAN

To add a VLAN, follow the steps below:

1. In the main menu of the WUI, go to System Configuration > Interfaces.
2. Click the relevant interface.
3. Click VLAN Configuration.
4. Enter the VLAN Id and click Add New VLAN.
5. Click Continue.
6. Repeat as needed.

To view the VLANs, in the main menu of the WUI, select System Configuration > Interfaces.

3.2 Remove a VLAN

Before removing a VLAN, please ensure that the interface is not being used for other purposes, for example as a multicast interface, WUI interface, SSH interface or a GEO interface.

To remove a VLAN select the System Configuration > Interfaces menu option and select the appropriate VLAN ID from the drop-down list.

Once selected, delete the IP and then click Set Address. Once the IP has been removed you will have the option to delete the VLAN, by clicking the Delete this VLAN button.

Repeat as needed. To view the VLANs select the System Configuration > Interfaces menu option and select the appropriate VLAN ID from the drop-down list.
References

Unless otherwise specified, the following documents can be found at

Web User Interface, Configuration Guide
## Document History

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<th>Reason for Change</th>
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<td>First draft of document</td>
<td>1.0</td>
<td>LB</td>
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<tr>
<td>Feb 2014</td>
<td>Minor change</td>
<td>Additional information added</td>
<td>1.1</td>
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