IBM Z and LinuxONE

Hardware Management Console and
Support Element
Network Information Worksheet

IBM

> **Note:**
>
> Before you use this information and the product it supports, read the information in "Notices" on page 15, and *IBM Systems Environmental Notices and User Guide*, Z125-5823.

Contents

About this publication

Use this worksheet to gather configuration information needed to install and configure the Hardware Management Console (HMC) and Support Element network for the IBM Z.

- Worksheet start pages
- HMC and SE worksheet tables.

Remote access must be enabled for each user ID. This is done with the **User Management** task using the **ACSADMIN** user ID.

If the customer will allow Outbound Connectivity via the internet, you may have to provide SSL Proxy information. Obtain this information from the customer.

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Accessibility features help users who have physical disabilities such as restricted mobility or limited vision use software products successfully. The accessibility features can help users do the following tasks:

- Run assistive technology such as screen readers and screen magnifier software.
- Operate specific or equivalent features by using the keyboard.
- Customize display attributes such as color, contrast, and font size.

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We welcome any feedback that you have, including comments on the clarity, accuracy, or completeness of the information.

For additional information use the following link that corresponds to your configuration:

Configuration	Link
IBM z17® Model ME1	How to send feedback to IBM
IBM LinuxONE Emperor 5 Model ML1	How to send feedback to IBM

Chapter 1. Understanding the network connections

The HMC is connected to a Service LAN which is used to manage the CPCs. The HMC is also connected to the customer or Open Environment for remote access.

This worksheet is not a network design tool. It assumes the customer has an idea on how the HMC and SE connections should be made. The intent of this worksheet is to ask enough questions to get the information you need to fill the installation panels for the HMC and SE network.

The 9175 utilizes the PTP/NTP direct connection (first introduced with 3931) which requires additional planning. Ethernet connection(s) (recommended Cat5e and higher) are required between the External Time source (ETS) and ETS1/ETS2 ports on IBM z17 oscillator card(s). In addition, (up to) 2 TCP/IP addresses(es) that are routable to the ETS must be configured for ETS1/ETS2 ports.

- A single drawer system configuration:
  - **ETS1** is connected to port J03 of **OSC0** (H101) in CPC0 (A10)
  - **ETS2** is connected to port J03 of **OSC1** (H102) in CPC0 (A10)
- In a two drawer or larger system configuration:
  - **ETS1** is connected to port J03 of **OSC0** (H101) in CPC0 (A10)
  - **ETS2** is connected to port J03 of **OSC1** (H102) in CPC1 (A15)

8561 introduces the Hardware Management Appliance (HMA) feature:

- The HMA feature allows the HMC and SE to run on the same physical hardware.
- The HMC and SE continue to have their own dedicated network connections.
- The network interfaces on the HMC component of the HMA appear as **em1** and **em2** rather than **eth0** and **eth1**.
- The routing of the physical cabling for the HMC component of the HMA network must now be run to the CPC location rather than the previous Standalone HMC location.
- All other network configuration information on HMA consoles remain the same as standalone consoles.
- The CPC must always be defined to both host HMCs.
- Both HMCs of the Hardware Management Appliance must have at least one network interface that share a common subnet for discovery purposes (for example, HMC1: 192.168.10.42/255.255.255.0, HMC2: 192.168.10.43/255.255.255.0).

In order for a machine configured into a customer network to report problems and reach valid client contact point in the event of emergencies, the mainframe needs to have updated and accurate contact information defined within the HMC and SE. The intent of the HMC/SE Call Home Contact Worksheet is to provide the contact information needed to properly set up call home contact panels during the installation procedure.

Chapter 2. Worksheet start pages

Table 1. Worksheet Start Table	
___ **001.**	Is this a new HMC and CPC install or are we installing an HMC and or SE/CPC into an existing network? If new, go to step 002. If existing, go to step 005.
___ **002.**	Attach HMC eth0/em1 and SE Interface 1 to the same LAN network. Continue with step 003 to configure the Customer or Open Environment HMC connections. If new, go to step 006. If existing, go to step 004.
___ **003.**	This completes the information needed for the install. Use this information to complete the necessary table information located in the **HMC and SE worksheet tables** section of this document.

Table 1. Worksheet Start Table (continued)	
___ 004.	Is this a new HMC install only? If yes, continue with this step. If no, go to step 005. This step assumes you are installing a new HMC into an existing HMC/Support Element network. Log on to an HMC that will be in the same network as this HMC with the user ID of ACSADMIN. Log on to an exiting HMC and navigate to the **Customize Network Settings** task under **HMC Management**. Using these panels as a reference, fill in the fields below for the settings of the new HMC. **Note:** HMC Name and IP addresses entries must be different from any other HMC in that network. HMC Console Name: _____ Domain Name: _____ **eth0/em1** TCP/IP Interface 1 Address: _____ TCP/IP Interface 1 Network Mask: _____ **eth1/em2** HMC to obtain IP address automatically on eth1/em2 as a DHCP Client? If yes, select Obtain IP Address Automatically in eth1/em2 LAN details. If no, select Specify an IP address and fill in the information below: TCP/IP Interface 2 Address: _____ TCP/IP Interface 2 Network Mask: _____ Name Services: _____ , _____ Routing Gateway Address: _____ (select eth1/em2 in interface field) Other Routing Information: _____ , _____ (optional) Continue with the step 003.

Table 1. Worksheet Start Table (continued)	
___ 005.	This step assumes you are installing a new CPC into an existing HMC/SE Network. Log on to an SE that will be in the same network as this SE with the user ID of ACSADMIN.
	Log on to an exiting HMC and navigate to the **Customize Network Settings** task under **HMC Management**.
	Using these panels as a reference, fill in the fields below for the settings of the new SE.
	Note: SE Name and IP addresses entries must be different from any other SE in that network.
	Support Element Name: _____
	Address 1 Information (em3):
	Primary: _____
	Alternate: _____
	Network Mask: _____
	Address 2 Information (em4):
	Primary: _____
	Alternate: _____
	Network Mask: _____
	Routing Information (if applicable): _____

Table 1. Worksheet Start Table (continued)	
___ 006.	This step assumes you are installing a new HMC and not using the default IP address on the Service LAN. **Note: The customer must supply the following network information to correctly install the CPC.** **HMC Setup Information** HMC Console Name: _____ Domain Name: _____ TCP/IP Interface 1 Address (eth0/em1): _____ TCP/IP Interface 1 Network Mask: _____ HMC to obtain IP address automatically on eth1/em2 as a DHCP Client? If yes, select Obtain IP Address Automatically in eth1/em2 LAN details. If no, select Specify an IP address and fill in the information below: TCP/IP Interface 2 Address (eth1/em2): _____ TCP/IP Interface 2 Network Mask: _____ Name Services (if applicable): _____ , _____ Routing Gateway Address: _____ (select eth1/em2 in Gateway Device field) Other Routing Information (optional): _____ , _____ **Support Element Network Setup Information** Support Element Name: _____ **Address 1 Information (em3):** Primary: _____ Alternate: _____ Network Mask: _____ **Address 2 Information (em4) (not used on 2097 z10):** Primary: _____ Alternate: _____ Network Mask: _____ Routing Information (if applicable): _____ Continue with step 004.
___ 007.	This step assumes you are installing a new HMC managed by the same administrator as a per-existing machine at the same site. If this is not the case, go to the next step. Log on to an existing HMC with the same user ID of the ACSADMIN. Log on to an exiting SE or an HMC managing the SE and navigate to the **Customize Customer Information** task under **HMC Management**. Using the Administration and System windows as a reference, fill in the fields on the Call Home contact Worksheet to be copied onto the new SE/HMC. **Note: The client must confirm that any carry-forward contact call home data is correct.**

Table 1. Worksheet Start Table (continued)	
___ 008.	This step assumes you are installing a new HMC or SE for which the client has specified a new call home contact or when there is no existing SE/HMC with the same administrator at the site. The client must provide the information outline on the Call Home Contact Information Worksheet. **Note: The customer must supply the following Call Home Contact information to correctly install the CPC.**

Chapter 3. HMA, HMC, and SE worksheet tables

StandAlone HMC Worksheet Table

StandAlone HMC Console Name _____
Domain Name _____

Table 2. StandAlone HMC Worksheet Table		
HMC IP Table	**HMC**	
	eth0	**eth1**[1]
IP Address		
Network Mask		
Gateway Address [2]		
DHCP enabled		
Name Services		
Other Routing Information		
Customize Outbound Connectivity - Internet Access (Optional)		
Allow Internet Access	**Y or N**	
SSL Proxy Address		
Resolve IBM IP addresses on console	**Y or N**	
Authentication Proxy user ID		
Authentication Proxy Psswrd		
Notes:		
1. The second adapter must be on a different subnet.		
2. A single gateway address is permitted and must be assigned to one of the two network adapters.		

HMA HMC1 Worksheet Table

HMA HMC1 Name _____
Domain Name _____

Table 3. HMA HMC1 Worksheet Table		
HMA HMC1 IP Table	**HMA HMC1**	
	em1	**em2**[1]
IP Address[2]		
Network Mask		
Gateway Address [3]		
DHCP enabled		

Table 3. HMA HMC1 Worksheet Table (continued)		
HMA HMC1 IP Table	**HMA HMC1**	
	em1	**em2[1]**
Name Services		
Other Routing Information		
Customize Outbound Connectivity - Internet Access (Optional)		
Allow Internet Access	**Y or N**	
SSL Proxy Address		
Resolve IBM IP addresses on console	**Y or N**	
Authentication Proxy user ID		
Authentication Proxy Psswrd		
Notes: 1. The second adapter must be on a different subnet. 2. Both HMCs of the Hardware Management Appliance must have at least one network interface that share a common subnet for discovery purposes (for example, HMA1: 192.168.10.42/255.255.255.0, HMA2: 192.168.10.43/255.255.255.0 3. A single gateway address is permitted and must be assigned to one of the two network adapters.		

HMA HMC2 Worksheet Table

HMA HMC2 Name _____
Domain Name _____

Table 4. HMA HMC2 Worksheet Table		
HMA HMC2 IP Table	**HMA HMC2**	
	em1	**em2[1]**
Customize Network Settings		
IP Address[2]		
Network Mask		
Gateway Address [3]		
DHCP enabled		
Name Services		
Other Routing Information		
Customize Outbound Connectivity - Internet Access (Optional)		
Allow Internet Access	**Y or N**	
SSL Proxy Address		
Resolve IBM IP addresses on console	**Y or N**	
Authentication Proxy user ID		
Authentication Proxy Psswrd		

Table 4. HMA HMC2 Worksheet Table (continued)		
HMA HMC2 IP Table	**HMA HMC2**	
	em1	em2[1]

Notes:

1. The second adapter must be on a different subnet.
2. Both HMCs of the Hardware Management Appliance must have at least one network interface that share a common subnet for discovery purposes (for example, HMA1: 192.168.10.42/255.255.255.0, HMA2: 192.168.10.43/255.255.255.0
3. A single gateway address is permitted and must be assigned to one of the two network adapters.

SE Worksheet Tables

SE Console Name_____

Note: The SE Console name is applied for the name of both SE's and the CPC.

Table 5. SE Worksheet Tables		
SE IP Table	**Support Element**	
	em3	em4[1]
Primary IP Address		
Alternate IP Address		
Network Mask		
Gateway Address [2]		
DHCP enabled		
Name Services (DNS)		

Note:

1. The second adapter must be on a different subnet.
2. A single gateway address is permitted and must be assigned to one of the two network adapters.

External Time Source (ETS) Worksheet Tables

CPC Serial Number _____

Table 6. External time Source (ETS) Worksheet Tables					
STP/ETS Network IP Table					
	ETS1	**Active**	**ETS2**[1]	**Active**	
IP Address					
Network Mask					

Table 6. External time Source (ETS) Worksheet Tables (continued)					
STP/ETS Network IP Table					
	ETS1	**Active**	**ETS2[1]**	**Active**	
Route[2] **- Destination** **- Subnet Mask** **- Gateway**					
Name Services DNS					

Note:

1. Although the same subnet can be defined on both interface; only one interface can be active with any particular subnet at a time. The same principle applies to routes; only one route to any particular destination can be active at a time

2. Three types of routes can be defined.

    a. **Network route:** A route to a destination of any size. *Required Information: Destination Address, Subnet Mask, Gateway Address*

    b. **Host route:** A route to a single address. *Required Information: Destination Address, Gateway Address*

    c. **Default route:** The route to anything not already defined, either through a directly attached lan or through a network or host route. *Required Information: Gateway Address*

3. The MAC addresses of ETS1 and ETS2 can now be displayed in the Support Element **Customize Network Settings** window under the STP/ETS Networks tab.

Call Home Contact Worksheet Table

Call Home Contact _____

Table 7. Call home Contact Worksheet Table
Call Home Contact Table

Administration
 	
    Contact Information:
    Company Name:
    Administrator Name:
    Email Address:
    Phone Number:

Mailing Address
 	
    Street Address:
    City or Locality:
    Country or Region:
    State or Province:
    Postal Code:

Table 7. Call home Contact Worksheet Table (continued)
Call Home Contact Table

System (Required if Mainframe Address is different from contact Mailing Address)
 	
    Street Address:
    City or Locality:
    Country or Region:
    State or Province:
    Postal Code:

Notes: 1. Call home Contact Data (Particularly the Administrator Name, Email Address,and Phone Number) must match the information provided in the client's CSP Community User Profile exactly to properly associate the machine with their account. 2. Recommendations by IBM for specifying Call Home Contact information can be found here: https://www.ibm.com/support/pages/node/6492597.

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European Community contact:
IBM Deutschland GmbH
Technical Regulations, Department M372
IBM-Allee 1, 71139 Ehningen, Germany

Tele: +49 (0) 800 225 5423 or +49 (0) 180 331 3233
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